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PROGRESS REPORT

SUBMITTED CONCURRENTLY TO:

THE NATIONAL INSTITUTE OF HANDICAPPED RESEARCH
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THE CENTER FOR THE PARTIALLY SIGHTED
PROJECT NUMBER 14-P-59166/9

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ADMINISTRATION ON AGING
OFFICE OF HUMAN DEVELOPMENT SERVICES
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

A COMPREHENSIVE COMMUNITY CARE SYSTEM
FOR PARTIALLY SIGHTED OLDER PERSONS
PROJECT NUMBER 90-A-1600

JUNE 1980

BY THE CENTER FOR THE PARTIALLY SIGHTED
THE SANTA MONICA HOSPITAL MEDICAL CENTER
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I. INTRODUCTION

The multidisciplinary Center for the Partially Sighted (CPS) is a department of the nonprofit Santa Monica Hospital Medical Center. The CPS was established with a grant from the Rehabilitation Services Administration in October 1977 that was transferred to the National Institute of Handicapped Research in July 1979. This report describes Center activities from May 1, 1979 through March 31, 1980, and establishes the basis for future work to be proposed. The concept being tested in the establishment of a model Center for the Partially Sighted was stated clearly in the original proposal: That partially sighted people are not blind (even though many of them are classified as legally blind); that they have usable residual vision; that they can be equipped with a variety of effective low vision aids, and should be instructed in how to use their remaining eyesight; that mobility training, psychosocial support and recommendations for overcoming specific environmental barriers can be combined with low vision services to alleviate or remove many functional limitations; and that these and other services should be made available in a context that is completely independent of existing facilities that serve the functionally or totally blind.

To operationalize this concept, the Center was established to give direct services to the partially sighted in Los Angeles and Orange Counties of the State of California, and indirect services to the partially sighted elsewhere in the state and in the nation. By direct services we mean those services that are dispensed to partially sighted people and their families and friends at the Center itself or at other useful locations. Direct services includes such activities as providing a complete low vision evaluation, as well as the other patient-related activities described in Model Comprehensive Service Modalities. By indirect services we mean those that are dispensed via the telephone or the mail. They include advice and direction given by telephone or mail, and the preparation and distribution of pamphlets, brochures, articles, and reports meant to help the partially sighted, their families, and those in the service-providing community who come in contact with them.

In the past, relative to visual capability, our nation has typically dichotomized its population into those who can see and those who are blind. This bifurcation might have been useful had the term "blind" been restricted to designate the functionally blind. The functionally blind include three groups: (1) The totally blind (who see no light at all); (2) those who have only light perception (i.e., those who can see light but are unable to distinguish visually shape, form, or detail in any object even with the help of an optical or electro-optical aid); and (3) those who have light projection (i.e., those who can distinguish the presence of objects that stand out with sufficient contrast to the background against which they are viewed). In this country, the functionally blind comprise at most about 116 thousand individuals. In the United States it was decided, in addition, to include among the legally blind all persons whose visual acuity in the better eye, even with ordinary ophthalmic lenses, does not exceed 20/200, or whose visual field is such that its maximum diameter in no direction exceeds 20°. By this nomenclature, about 348 thousand Americans not functionally blind are defined to be legally blind. They are partially sighted individuals who have usable residual vision; by "usable residual vision" we mean remaining eyesight that, with or without the help of optical or electro-optical aids, can be used to do such things as read print, write with a pen or pencil, or maneuver safely without the aid of a dog, cane, or sighted person.

Finally, there are also a sizeable number of people who are partially sighted but are not legally blind. In this category we place those whose visual acuity in their better eye, even with ordinary corrective lenses, does not exceed 20/70, but is better than 20/200, as well as those whose visual field in some direction exceeds 20° but is no greater than 30°. The exact number of people who meet these latter criteria is not known but, based upon National Academies of Science and Engineering figures, we estimate conservatively that the number currently is at least 1.41 million. These people, like the partially sighted who are legally blind, are not functionally blind. They do, however, need kinds of visual assistance over and above those required by fully sighted people.

What these data indicate, taken together, is that there are at least 1.88 million Americans who are visually impaired, where "visually impaired" comprehends both the legally blind and the partially sighted who are not legally blind. Moreover, among the visually impaired, more than 93 percent (or 1.76 million) are partially sighted. It is these individuals who comprise the national target population that the CPS has undertaken to serve either directly or indirectly. On a regional basis, we have estimated (extrapolating from the same data base) that there are more than 73 thousand partially sighted people in Los Angeles and Orange Counties. It is from this group that the Center has drawn the vast majority of its patients. However, by phone and by mail the Center has been of assistance to many of the more than 1.69 million Americans who are partially sighted and who live elesewhere in the nation. Last, by presentations to professional audiences and by on-site training to those interested in various aspects of low vision, as well as by the development of service guidelines, we hope eventually to contribute to the establishment of such centers elsewhere in the nation.

That specialized low vision services are needed by the partially sighted follows from the consideration that most treatment programs are based on the legal dichotomy of visually impaired persons into sighted and blind. The result has been provision of services to the legally blind that are, on the whole, at non-sequitur

best appropriate for the functionally blind. In consequence, many partially sighted persons who are legally blind have been regarded and treated as if they were functionally blind; such treatment, in turn, has often led those individuals also to regard themselves as blind and to restrict their educational, occupational, and social horizons accordingly. On the other hand, many partially sighted persons who are not legally blind do not receive any special services; as a result, these individuals too are unable to make optimal use of their residual vision and are thereby unduly limited. The goal of Center services, in contrast, is to enable partially sighted persons of all ages to make the fullest possible use of all their sensory capabilities, including their remaining eyesight, in order to pursue independent and satisfying lives.

The remainder of this report documents in detail the tasks undertaken in the 11 months ending March 31, 1980, to establish for partially sighted persons the range of services required to meet their special needs. Service delivery and patient data collection have been carried out by the clinical staff within the Center, while design, systematization, and analysis of data are the responsibility of the research staff located at The Rand Corporation. In addition, this report provides the foundation for specific activities and goals to be accomplished during the proposed three-year application period (see attached competitive extension application). As will be evident, forthcoming work is directed toward increasing the Center's formal training capabilities, producing guides for the implementation of comprehensive low vision centers or services, developing a program of research to improve knowledge of visual function in the severely impaired eye, and securing continuous provision of comprehensive individualized services to the partially sighted.

II. WORK PLAN-TASK DESCRIPTION

The description of the work plan updates information presented in the June 1979 progress report and continuation proposal. The time line included in that document is reproduced here, indicating expected schedules for the carrying out of 16 major tasks. Tasks are numbered and described briefly below, and the extent to which they were successfully completed within specified time frames is indicated. For convenience, the 1977-1978 funding period is referred to as year 1, the 1978-1979 funding period as year 2, and the current funding period as year 3; across project years, activity months from start are consecutively numbered and are referred to hereafter as months 1 through 36.

1. Renovation and furnishing of clinical and office space.

With funds provided by SMHMC and private contributions, space renovation began in late 1977. By March 1978 the first clinical office became fully operational, and low vision evaluations began at that time. A second clinical office became operational in November 1978. As of June 1979 we reported that negotiations with SMHMC were underway for additional space, including a third clinical office and another office or offices to house the increased staff. Disposition of our request awaits a final decision by the hospital administration about an overall hospital space reallocation plan.

2. Requests to referring ophthalmologists and optometrists for their patients' records.

Requests for patient information began in March 1978 and continue on an as needed basis. Responses from these referral sources have been excellent. Data received have proved useful to the Center's treatment of patients for whom information was requested. In only a small number of instances has the Center had to obtain ophthalmological examinations, reflecting a considerable savings over projected expenses.

PLAN OF WORK AND SCHEDULE - Time Line

		1977-78 Year 1 1 - 12	1978-79 Year 2 13 - 24	1979-80 Year 3 25 - 36
1.	to renovate and equip space for the Center	$\boxed{1}$ ------>		
2.	to request patients' most recent ophthalmological examination records	$\boxed{6}$ ----------	----------------	--------------->
3.	to provide a complete low vision examination	$\boxed{6}$ ----------	----------------	--------------->
4.	to assess patients' environmental problems and needs	$\boxed{6}$ ----------	----------------	--------------->
5.	to assess patients' current and future life enriching goals	$\boxed{6}$ ----------	----------------	--------------->
6.	to form an Advisory Board		$\boxed{13}$ -------->	
7.	to assess patients' household members to facilitate mutually constructive living arrangements		$\boxed{16 - 18}$ ------	--------------->
8.	to assess patients' psychosocial needs		$\boxed{16 - 18}$ ------	--------------->
9.	to implement group discussions aimed at problem sharing and resolution		$\boxed{19 - 21}$ ------	--------------->
10.	to begin data collection summaries		$\boxed{22 - 25}$	--------->
11.	to prepare a general information brochure on the partially sighted			$\boxed{25}$ -------> 36
12.	to prepare a home environment information brochure for the partially sighted			$\boxed{25}$ -------> 36
13.	to implement training programs for professionals and paraprofessionals			$\boxed{25 - 28}$ ----->
14.	to establish an extensive community outreach and information program			$\boxed{25 - 28}$ ----->
15.	to seek appropriate audiences for lectures, panels, workshops, conference and journal papers			$\boxed{25}$ --------->
16.	to systematize results of ongoing project evaluation and to prepare guidelines for the establishment of similar service delivery systems for the partially sighted			$\boxed{25}$ --------> 36

Boxed items indicate start up times for any given activity. In some cases we note that the start times could occur within a 2 or 3 month period, for example in activities 4, 5, 7 et al. Those activities that will be completed within the 36 month period have the month for completion noted but unboxed, e.g., see tasks 11, 12, and 16. Finally, activities that will continue beyond month 36 are indicated by the horizontal arrow.

3. Provide a complete low vision examination.

Complete low vision examinations began on schedule. Due to sharply increasing demand for our services, we hired two additional optometrists specializing in low vision (hereafter referred to as "low vision specialists") in November 1978 to participate on a part-time basis (the equivalent of two and one-half days a week). During November 1978 a second clinical office became fully operational. We expect to refurbish a third examining room to house the visual evoked response (VER) and electroretinography (ERG) equipment recently obtained (see the description of their use in the account of low vision services below). Currently this equipment is housed in the larger clinical office.

4. Assessment of patients' environmental problems and needs.

Assessment of patients' environmental problems and needs began in month 1 as part of the preliminary intake procedures. A revised and considerably more refined interview instrument, developed on the basis of the Center's recently published "Visual Environmental Adaptation Problems of the Partially Sighted" (VEAP) report,* was piloted and included in the intake battery during May 1979 (see Appendix B2). Moreover, during March 1979 we began to devise follow-up procedures involving visits to patients' home, school, or work sites to evaluate resolution of visual environmental adaptation problems reported during intake as well as to determine whether patients are faced with other significant visual environmental problems not represented in the Center instrument (see Appendix F3). In addition, the follow-up visit includes observation and assessment of patient use of low vision aids prescribed by the Center, as well as the administration of psychosocial post-tests and a patient satisfaction scale. Follow-up visits are scheduled to occur approximately six months after a patient's initial visit. Full implementation of follow-up visits was accomplished by the end of September 1979. Data collection for this report ended March 31, 1980, reflecting a six-month effort to collect standardized follow-up data. Procedures and results are discussed in the description of research and evaluation activities and in the data summary respectively.

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*Genensky, S. M., et al, Visual Environmental Adaptation Problems of the Partially Sighted: Final Report, CPS-100-HEW, Center for the Partially Sighted, SMHMC, January 1979.

5. Assessment of patients' current and future life enriching goals.

Assessment of patients' goals is an integral part of intake procedure, and preliminary interview work began in March 1978. During this time we found that patients' expectations often exceeded or underestimated their functional visual potential. We explored procedures in which the low vision specialist and the patient together "negotiate" a realistic set of goals in terms of the current and projected parameters of the patient's visual impairment. This involved educating the patient as to the limitations and potentials of both the eye and the visual aids. These procedures were formally initiated at the end of September 1979. Although negotiated goals are implicit in the prescription and training of low vision aids, clinicians did not in fact summarize these goals in the space provided on the data collection instrument. This omission reflects an ongoing resistance by clinicians to conform with data collection procedures, and a failure by the evaluation team to monitor on a daily basis the recording of clinical judgments. Steps to correct these procedural deficiencies are underway (see the research and evaluation discussion below for a description).

6. Formation of an Advisory Board.

The purpose of the Advisory Board is to review project activities from the standpoint of their effectiveness and visibility as community services and to assist in obtaining long-term independent funding for their continuation. In FY 79, the following people were nominated and agreed to serve on the Board, whose membership includes representatives of the low vision field, community services procedures, the business community, and the target population to be served:

Ms. Lisa Auerbach: A prominent resident of Los Angeles known for her services to the community and her acts of philanthropy.

Ms. Priscilla Dunn: A partially sighted person who is very much interested in and committed to helping other partially sighted persons.

Mr. George Fogarty: A partially sighted person who is a former president of the American Council for the Blind of California who is very knowledgeable in the functioning of California's state government.

Mr. Marshall Hickson: A distinguished attorney in the Santa Monica area and an active supporter of Santa Monica Hospital Medical Center, including its Center for the Partially Sighted.

Mr. Stephen P. Jeffries: Secretary of The Rand Corporation and prominent civic leader in the Santa Monica area. He is also intimately acquainted with the research that Drs. Tora K. Bikson, Thomas H. Bikson, and Samuel M. Genensky have performed at The Rand Corporation and at the Santa Monica Hospital Medical Center on behalf of partially sighted persons.

Edwin B. Mehr, O.D.: One of the outstanding leaders of the field of low vision and a diplomate in low vision of the American Academy of Optometry. He is currently Consultant on Low Vision for the Western Blind Rehabilitation Center, VA Medical Center, Palo Alto, and Clinical Professor at the University of California School of Optometry, Berkeley.

Mr. Alfred P. Stern: A distinguished leader of the Los Angeles financial community and senior officer of Drexel Burnham Lambert, a prominent brokerage house. Mr. Stern has agreed to serve as chairperson of the Advisory Board.

In FY 80, four additional Board nominees agreed to serve as members. They are:

Mrs. Patricia Jenkins: A Los Angeles attorney who is herself partially sighted and dedicated to the problems and needs of the partially sighted. Mrs. Jenkins has been elected vice chairperson of the Advisory Board.

James Kleckner, M.D.: A Los Angeles ophthalmologist, currently Chief of Staff of Ophthalmology at Daniel Freeman Memorial Hospital and a member of the staff of Santa Monica Hospital Medical Center and Century City Hospital. Dr. Kleckner is an assistant clinical professor at the Jules Stein Eye Institute at UCLA.

Bradley Straatsma, M.D.: A nationally recognized ophthalmologist who is presently the Director of the Jules Stein Eye Institute at UCLA and Chairman of the Department of Ophthalmology, UCLA.

Mr. Albert Tenzer: President, Krofft Entertainment, Inc., Los Angeles. Mr. Tenzer is a certified public accountant and an authority on cost-benefit analysis.

The Advisory Board has met three times during this reporting period and discussed questions, approved policies, or initiated actions in three areas: (1) fund raising and public relations; (2) increased information dissemination between the Center and the ophthalmological staffs at various Los Angeles hospitals; and (3) clarification of the relationship between the Center and the Santa Monica Hospital Medical Center.

In addition to its Advisory Board, the Center seeks advice and guidance from members of the ophthalmological community in an effort to make them aware of the special services offered by the Center that would benefit their partially sighted patients. Many of these ophthalmologists have in turn become enthusiastic supporters of the Center and are acting in an advisory capacity to the Center on medical matters. The vitae of three of these advisors, namely, Drs. Harold Katzman, James Kleckner, and Roger Sorenson, are given in the biographical section of the accompanying proposal to NIHR.

7. Assessment of patients' household members to facilitate mutually constructive living arrangements.

This assessment is carried out in two ways. Since the inception of the project, our low vision specialists have explained to those family members who accompanied the patient to the Center the nature of the patient's functional capabilities and ways that family members could assist the patient. Often a family member is present during part of the intake process to assist the patient in responses to questions and to accompany the patient during the low vision evaluation. On these occasions discussions with family members take place on an informal basis. During January 1979, with the addition of a clinical psychologist to the project staff, the Center was able to provide individual and family counseling on an as needed basis. In August 1979 we began the first family group counseling sessions; these sessions have provided an opportunity for families of partially sighted persons to share their experiences and to focus their collaborative attention on developing mutually constructive living arrangements (see the description of psychological services for a more detailed discussion).

8. Assessment of patients' psychosocial needs.

Assessment of patients' psychosocial needs was also approached in two ways. Beginning in March 1979, all patients were encouraged to meet with the staff psychologist (or the psychology interns) on a voluntary basis in order to assess psychosocial needs as they pertain to visual impairment. Further, all patients were encouraged to participate in individual and/or group counseling sessions. Those who have successfully adapted to visual impairment are especially asked to participate in group sessions to share their positive experiences and to serve as role models (for a more detailed account, see the description of psychological services). In addition, by July 1979 we had introduced psychological screenings in order to better determine patients' needs for psychological services at the Center.

During March 1979 we designed, pretested, and produced four types of measures for assessing psychosocial status in an objective and standardized procedure. These measures attempt to represent patients' quality of life (adapted from Flanagan's (1978)[*] research related to components of quality of life), patient's self-description (adapted in part from the sex role adjective check list (1970[**], 1972[***]), their mood and morale (adapted from the General Well Being

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[*] Flanagan, J.C., "A Research Approach to Improving Our Quality of Life," American Psychologist, Vol. 33, No. 2, 1978, pp. 138-147.

[**] Broverman, I. K., D. M. Broverman, F. E. Clarkson, P. Rosenkrantz, and S. R. Vogel, "Sex-role Stereotypes and Clinical Judgments of Mental Health." Journal of Consulting Psychology, Vol. 34, 1970, pp. 1-7.

[***] Broverman, I. K., S. R. Vogel, D. M. Broverman, F. E. Clarkson, and P. Rosenkrantz, "Sex-role Stereotypes: A Current Appraisal." Journal of Social Issues, Vol. 28 (2), 1972, pp. 59-78.

Index), and their future expectations (see Appendixes B2 and B3 for sample forms). All four sets of items were also administered on a post-test basis during follow-up visits to patients approximately six months after their initial visit to the Center. Follow-up data collection began October 1, 1979.

9. Implementation of group discussion aimed at problem sharing and resolution.

In January 1979, well ahead of schedule, the project initiated training of a peer counseling group made up of former Center patients or family members of Center patients. The group was trained by the staff psychologist, who provides ongoing supervision of peer counseling activities. In February 1979 a weekly patient group was also established. During this reporting period two special interest groups were implemented--one for parents of partially sighted children, and the other for working-age adults. These groups provide regular opportunities for patients to share experiences and exchange ideas about problem resolution. Their specific functions and contributions are discussed in greater detail in the description of psychological services.

10. Continuation of data collection summaries.

Data collection summaries began during January 1979, six months ahead of schedule. During the first half of FY 79, extensive efforts went into the development, pretesting, and systematization of data collection forms. After successive revisions based on their use for patient data collection, intake instruments were printed in final form and introduced in October 1979, along with a code book for direct data entry from the precoded instruments.

Summaries of project data obtained using preliminary data collection instruments were first reported in June 1979. Those summaries covered the period March 1978 through April 1979. Data summaries for this report include the period from May 1979 through March 1980. Since the full instrument battery was not finalized until October 1979, the data are in some respects incomplete;

however, for the majority of items there are a sufficient number of cases for most analysis purposes (see the data summary below).

For this report, we stopped submitting data for entry at the end of day, March 31, 1980, allowing three months for exploration, analysis, interpretation, and reporting of data. Concurrently, forms are being revised on the basis of the results. Revised instruments and procedures will be pretested in July 1980, with data collection using the new forms to begin August 1, 1980.

11. Preparation of a general information brochure on the partially sighted.

Work on this brochure began in January 1980 and is well underway. A preliminary draft will be completed by September 1980, with a final draft and publication scheduled for FY 81.

12. Preparation of a home environment information brochure for the partially sighted.

Work on this brochure began in January 1980. The content was developed on the basis of the Genensky et al (1979) report on visual environmental adaptation problems*, as well as on our analysis of these same problems with our current patient population. A preliminary draft will be completed by September 1980, with a final draft scheduled for publication in FY 81.

The content of the brochure has been broadened in scope. It will also include external environmental problems and suggestions. In the meantime, in response to patients' needs and requests, two brief sets of material have been prepared and are distributed (see "Household Hints," Appendix I, and "Travel Suggestions," Appendix D3). Much of this material will be included in the more comprehensive brochure.

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*Genensky, S. M., et al, Visual Environmental Adaptation Problems of the Partially Sighted: Final Report, CPS-100-HEW, Center for the Partially Sighted SMHMC, January 1979.

13. Training opportunities for professionals and paraprofessionals.

Training opportunities for professionals and paraprofessionals in service delivery to the partially sighted were initiated on an informal basis in FY 80. During this funding period, five optometrists have spent from several days to a full month at the Center observing or working with patients (under supervision of the project's low vision specialists) in the areas of intake, low vision evaluation, prescription and training in the use of low vision aids, and case conferences. One optometrist, a recent graduate of the New England College of Optometry, intends to start a private practice in the mid-west; another optometrist is currently employed at a Veterans Administration facility in Los Angeles and intends to start a private practice in the mid-west; the remaining optometrists practice in the Los Angeles area. In addition, one optometric student and three undergraduates who intend to pursue optometry have spent several days at the Center.

Inservice training sessions or workshop presentations for paraprofessionals (VH teachers, resource room specialists, and aides) were conducted for five Los Angeles school districts and four conferences in the area. These sessions included such topics as: (1) differences between the partially sighted and the functionally blind population; (2) how VH teachers can better explain the visual impairments of partially sighted students to their fully sighted peers; (3) demonstrations of a wide variety of low vision aids, many of which are unknown to paraprofessionals who deal with the visually impaired; and (4) a description of the Center and how its services can assist partially sighted students.

Although training opportunities to date have been relatively few in number, in all cases the reception was enthusiastic. Optometrists found these experiences extremely valuable in affording an opportunity to work with a great number and variety of low vision cases that they would be unlikely to see even in several years of private practice. For paraprofessionals, both information dissemination and aids demonstration were seen as providing state-of-the-art updates. We expect to formalize and expand on such training opportunities in FY 81.

14. Establishment of an extensive community outreach and information program.

Considerable progress has already been made with community outreach and referral services, as described below. Both types of activities were initiated during October and November 1978, one year ahead of schedule. Outreach activities have been directed toward informing area-wide ophthalmologists and optometrists, district offices of the California Department of Rehabilitation, schools, and senior citizen centers about the Center and its activities (see below). Results of outreach efforts confirm our belief that there exists a large population of partially sighted persons who need special services. There continues to be a month's wait for a first Center visit. Transportation to and from the Center remains a major problem for patients due to the lack of adequate public transport systems and, in many cases, to the extensive distances that patients have to travel. (As expected, the gas shortage and price increases compounded this problem.)

Referrals to the Center during the past year were similar to those cited in the June 1979 report. That is, ophthalmologists continue to supply about 60 percent of patients. Patient referrals from optometrists rose 1 percent to 5 percent. The Center in the coming funding period will step up efforts to identify patients who might benefit from Center services that optometrists in private practice do not provide, and to refer them for just those services.

In the last report we noted that two population subgroups were overrepresented: 86 percent of the patient enrollment was white, and 62 percent fell in the legally but not functionally blind category. Efforts to reach more minority groups met with some success: the minority patient sample increased from 14 to 21 percent. Further, the proportion of legally blind (not functionally blind) patients decreased to 58 percent, with a corresponding increase in the proportion of partially sighted (not legally blind). However, those data still reflect the need to reach and enroll underrepresented groups.

Finally, extensive efforts are allocated to directing patients to community resources for types of assistance that the Center does not provide. In general, referrals from the Center have been concerned to meet patients' educational, vocational, recreational, transportation, and other social service needs (see the discussion of outreach, resource referrals, and information dissemination for details). Part of the difficulty inherent in coordinating community resources is that the Center patient population represents a large geographic area, whereas community agencies typically have more restricted community or catchment boundaries. Consequently we have continued to serve patients relative to their own specific needs, referring to agencies in their local community if possible; we have not developed a general and routine community resource referral system.

15. Presentations by project personnel to appropriate audiences.

This goal overlaps with goal 13 in that some presentations serve as training sessions. As in the last reporting period, Center personnel made over a dozen presentations to organizations for and about the visually impaired, provided inservice training sessions to VH personnel, and gave invited or referred papers to several universities and colleges as well as to national and regional conferences.

16. Systematization of results and preparation of guidelines.

Systematization of results of the past year of data collection began in April 1980. As the data summary below indicates, such systematization involves at minimum the following steps: (1) obtaining a demographic, visual, and psychosocial description of the patient population; (2) providing a detailed account of the Center's intervention, including amounts of staff time expended in each type of service; (3) analyzing patient outcomes in relation to descriptive data and intervention efforts; (4) comparing results in these three information domains with results obtained in the previous year and with goals set for the current year.

Preparation of guidelines for potential replication of project activities and services began in April 1980 as each Center component attempted to make explicit its procedures for reporting purposes. This task will carry over into FY 81, 82, and 83 as we continue to distill and standardize Center operations and to draw data-based conclusions.

III. MODEL COMPREHENSIVE SERVICE MODALITIES

A. LOW VISION SERVICES

Considerable success in outreach efforts by the Center has been reflected in increasing demand for project low vision services. During the 11 months ending March 31, 1980, the low vision staff saw approximately 560 partially sighted persons for at least one appointment each (a detailed picture of the patient population is provided below). Despite the increase in patient load over last year, we believe there may still be a tendency among some professionals to underrefer patients to the Center; they may not fully understand that the comprehensive services offered can help low vision patients who require services beyond those they can supply. There have, however, been cases in which low vision optometrists have sent patients here for evaluation and recommendation of aids unavailable in their practices, e.g., closed circuit television evaluation.

The Center's vision services staff currently consists of one full-time low vision optometrist, two part-time low vision optometrists, two full-time low vision assistants, a full-time administrative assistant, and two part-time personal environmental adjustment counselors. The low vision assistants administer case histories, provide some of the auxiliary testing during the low vision evaluation, help to train patients in the use of visual aids, and take responsibility for stocking and verifying visual aids. One assistant additionally monitors school and follow-up reports. The other assistant is the coordinator of clinical services, regulating patient flow (see Appendix B4) and maintaining necessary correspondence with third-party payment organizations. Both assistants are concerned with recalling patients at appropriate intervals for rechecks and monitoring the visual aid loaner program. The low vision administrative assistant is responsible for ordering and receiving the visual aids, monitoring the visual aid inventory, and typing reports and correspondence for the low vision optometrists. Finally, personal environmental adjustment counselors are responsible for follow-up activities, which consist of actually visiting patients, approximately six months after patients' initial visits to the Center, in their homes, classrooms, or places of employment when appropriate. When necessary, these individuals may confer with the optometric staff regarding additional services or aids individual patients may require.

The Center's optometric staff provides the foundation for its delivery of comprehensive low vision services, although they meet regularly with the other service providers to discuss the total treatment plan and to evaluate the need for any additional service. This occurs both on a one-to-one basis and at scheduled case conference meetings. Optometric staff responsibilities include overseeing intake procedures, providing patients with a complete low vision evaluation, and prescribing and fitting visual aids, as well as making recommendations for environmental modifications to help patients accomplish specific visual tasks and goals, training patients in the use of visual aids, generating reports to referring sources, and implementing and supervising follow-up activities to assure that patients are deriving the full benefit from visual aids, suggested environmental modifications, and other services.

Intake Procedures

Before examination by a low vision specialist during the first and second visits to the Center, low vision assistants and other staff members provide information and consent forms and administer case histories that include information about the patient's past and current medical and visual problems and treatments, a description of low vision aids currently in use by the patient, a self-report of selected environmental problems, and psychological items tapping mood, morale, expectations, and self-descriptions. The psychosocial measures just described are administered only to those patients who are at least 19 years old.

In addition, a sliding-scale fee schedule was implemented in January 1980 for those patients who are not covered by third party payment, such as from Medi-Cal or the California Department of Rehabilitation. Patients are asked to bring verification of their net monthly income for determination of fees.

These intake procedures require from one-half hour to one hour during the first visit, depending on the patient's understanding and acceptance of the questioning. The intake forms are detailed in Appendixes A and B, and Appendix L includes intake and general informational material that has been translated into Spanish for the benefit of our Spanish-speaking patients. Of special importance to the clinician making the low vision evaluation are the patient's presenting complaint, past eye history, goals and objectives, most helpful visual aids among those currently in use, and most significant environmental problems.

For each optometrist, approximately three new patients are scheduled for low vision evaluations, and approximately three continuing patients are seen each day. In addition, two to three screenings or dispensings may also be scheduled in the course of a day. Two types of patient screenings have been scheduled over the past year. The first involves Center staff members going out into the field and screening patients for low vision or for the need to have a general vision examination. The second type of screening takes place at the Center and involves people who call for appointments but are not sure of their eligibility for the Center's low vision services. Instead of a regular two-hour initial visit, a 10-20 minute screening appointment is scheduled; at this time we determine the person's eligibility based on visual history, visual acuity measurements, and examination of external and internal ocular structure. Individuals who, as a result of these screenings, appear to fit within the population we serve, are later given a full low vision evaluation.

Low Vision Evaluation

The purpose of the low vision evaluation is to determine the degree of visual impairment, assess the patient's goals and objectives, and decide what visual aids will enhance visual efficiency. Forms and protocols for this evaluation are in Appendixes C and H1. In determining the prognosis for successful low vision treatment, Center optometrists assess the clinical data, both subjective and objective, as well as the personal characteristics described above. The prognosis for increasing the visual efficiency of the visually impaired individual is a prediction based upon the integration of several factors. These include the etiology of the visual impairment, current visual acuity, integrity of the visual field and visual pathways, the refraction, and the effects of varying levels of illumination on a patient's ability to see. Other important factors include the patient's motivation and response to magnification.

The core of the Center's low vision evaluation consists of the basic components of any comprehensive vision examination, with certain modifications. These components include examination of both internal and external ocular structures, determination of the integrity of the visual pathway, assessment of pupillary responses, visual field testing, and measurement of visual acuities. Other measurements include color perception, extraocular muscle function, degree of binocularity, accommodative amplitude, measurement of intraocular pressure by tonometry, and refraction.

- Measurement of visual acuity indicates the size of the retinal image that can be resolved by the visually impaired eye, and approximately what degree of magnification will be utilized for the prescription of visual aids. Such measurements are taken with specialized low vision charts for both near, intermediate, and far testing distances. It must be kept in mind, however, that visual acuity has no functional implication without other accompanying clinical information.

- Evaluation of the visual field is an assessment of the integrity and sensitivity of the retina and visual pathways. It is not possible to prescribe visual aids properly until the field of vision has been evaluated by perimetry to measure the limits of peripheral vision, and by tangent screen testing to measure the sensitivity of the central retina. The types of visual aids that will be prescribed are dependent upon the size, degree, and location of the visual field defects.

- The evaluation of the visual field is also very important in determining the need for classical orientation and mobility service (i.e., how to move about with the aid of a cane). For example, a person with retinitis pigmentosa may have a serious restriction of the peripheral visual fields and may require this type of orientation and mobility training.

- Determination of the patient's refraction is also very important. Correction of the refractive error (myopia, hyperopia, astigmatism, aphakia, or presbyopia) insures that even in the presence of reduced visual efficiency, the retina is receiving an accurately focused image.

- The low vision evaluation also includes an assessment of the effect of varying levels of illumination on the patient's visual efficiency. Such factors as sensitivity to bright sunlight (photophobia), increased visual acuity under conditions of bright illumination, and visual performance under moderate to low levels of illumination, are explored. The low vision examination attempts to integrate the resulting array of information in order to determine the partially sighted individual's potential for increased visual efficiency. Once this prognosis has been made, appropriate testing and training may be instituted with specific visual aids for specific visual tasks.

During the course of the evaluation, specialized low vision diagnostic equipment is utilized. This includes microscopic and telescopic lens sets such as those manufactured by Designs for Vision, Keeler, and American Optical. Other diagnostic optical devices include an extensive array of magnifiers, *loupes*, and near vision devices, as well as a number of *monocular and binocular telescopic devices*. A *closed circuit television system* (CCTV) may also be used to evaluate the low vision patient. This device allows for magnification of reading materials and also permits patients to write and see what they are writing. The closed circuit television system is generally used by individuals who require exceptionally high degrees of magnification. The *automated Fieldmaster perimeter* is an especially useful device that allows the clinician to obtain a relatively accurate assessment of visual field integrity. Occasionally certain modifications of the standard procedure must be employed; even so, due to the nature of our patient population, exact measurements of the visual field are not always possible. However, the Fieldmaster generally gives enough valid clinical data to be useful, i.e., relative size, shape, location, and degree of visual field defects. (Apparatus and measurements are described in more detail in Appendix C7.) The Center has installed and made exploratory use of equipment for collecting objective electrophysiological measurements utilizing two different procedures:

- (1) visually evoked responses (VER); and (2) electroretinography (ERG). The VER measures electrical activity in the visual cortex as the result of visual stimulation. Such testing allows for objective evaluation of visual function as well as the integrity of the visual pathways. The ERG measures electrical activity at the level of the retinal photoreceptors as the result of visual stimulation. This test is used to diagnose certain disorders which affect the retinal photoreceptors.

Field Evaluation

Two grids (developed by Esterman[*] [**]) have made it possible quantitatively to evaluate a patient's perimeter and/or tangent screen visual fields. For reasons explained later in the report, only the perimeter grid is discussed here. The peripheral (perimeter) field grid is a relative-value scale based entirely on function. The grid (see Appendix C7) divides the normal visual field into 100 units, each worth 1 percent. The score is made functional by the unequal size and distribution of the units, calculated to assign more value automatically to regions of greater functional importance; that is, the center of the field has more value than the periphery, the lower hemisphere of the field more than the upper, and the periphery along the horizontal meridian more than elsewhere on the periphery.

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[*] Esterman, Ben M.D., "Grid for Scoring Visual Fields I", Archives of Ophthalmology, Vol. 77, June 1967, pp. 780-786.

[**] Esterman, Ben M.D., "Grid for Scoring Visual Fields II", Archives of Ophthalmology, Vol. 79, 1968, pp. 400-406.

The patient's field is measured and then plotted by a trained low vision assistant. A transparent Esterman grid is then laid over the field plot. Each box in the grid contains a central dot. The score is obtained by counting all dots that are unshaded by scotoma or untouched by the boundary of a scotoma. The percentage of useful field remaining to the patient may be derived directly from this count, because each free dot equals 1 percent. The grid can be printed to fit any size field plot by photographic enlargement or reduction as long as the relative size of the units and the relative position of the dots remain unchanged. According to Esterman, the grid like any relative value scale, represents an estimate of functional value; he bases its validity on his 30 years of experience as an ophthalmologist at the world's first glaucoma clinic. The accuracy of the grid has been tested in 1000 separate cases by 20 different oculists, all with at least 10 years experience, who each scored 50 field charts from the records of the Glaucoma Clinic of the Herman Knapp Memorial Eye

Hospital. Correlations between the scores of this "jury" and the percentage scores obtained by the grid were high and significant--grid scores fell within a 10 percent margin of error 903 times out of 1000.

Although the population used to develop and test the grid primarily comprised glaucoma patients, it also appears to be useful in instances of retinal disease, neuropathy, trauma, and other types of visual pathology. It has been used not only in the quantitative comparisons within individual patients, but more importantly also in large-scale studies of field defects that made use of statistical inference procedures. It should be noted, however, that the grid is not a substitute for plotting a patient's field, since this must be done before the grid can be used. Thus the grid can be no more accurate than the process of field taking itself.

For Center patients the Esterman peripheral field grid is used with our primary perimetric field measuring apparatus, the Fieldmaster. The Esterman grid has been enlarged to fit over the Fieldmaster scoring plot and printed on clear acetate so that the plot can be seen through the grid when the two are superimposed. The visual field plot typically used with an Esterman grid is the Goldmann field plot, a method that defines limits of the field and scotoma with continuous lines. The Fieldmaster plot, in contrast, has 100 fixed stimulus points, so that the scotoma is defined by the stimulus points that are not blackened. Because of this difference, a Fieldmaster plot is scored somewhat differently.

Six different percentages are calculated using the grid with the Fieldmaster plot. These represent the periphery (that area outside of the central field box), superior and inferior nasal quadrants, superior and inferior temporal quadrants of the central field, and the total central field (the sum of the 4 central quadrants). The central field comprises 50 percent of the total visual field. To start, the four separate quadrants in the central field box are calculated by dividing the number of stimulus points marked on the plot by the total number of possible stimulus points in that quadrant. This number is then multiplied by the quadrants' weight with respect to its relative functional importance in the visual field. The weighting factor for each of the quadrants is calculated by counting the number of "dots" in that quadrant on the Esterman grid and then dividing this number by 100. The superior nasal and temporal quadrants both have a weighting factor of .08, and the inferior nasal and temporal quadrants both have a weighting factor of .17. The periphery (the remaining part of the field outside the central field box) has a weighting factor of .50. For example, if the superior nasal quadrant had 12 stimulus points marked on the patient's visual field plot, this would be divided by 13.5 (the possible number of stimulus points in that quadrant) to give a value of .889 or 88.9 percent. This value is then recorded to indicate the percentage of functional field in that quadrant. This number is then multiplied by the quadrant's weighting factor of .08 to give the final value of .071 or 7.1 percent, which will be added into the total calculation of the percent of functional visual field. The total functional visual field, for the given stimulus conditions, is the sum of the weighted values of the four central quadrants and the periphery. The central functional visual field is the sum of the four weighted central quadrants multiplied by two to yield values with a maximum possible value of 100 percent.

Certain limitations accompany use of the Esterman grid to describe visual fields of partially sighted patients. Aside from the subjective nature of field measurement (as described in the Appendix) there are factors that characterize our patient population that were not present to the same extent in Esterman's study. The most important of these is the heterogeneity of the patient population. The pathologies present in Center patients are quite varied, and comparison of the field defects between pathologies must be undertaken with great care so as not to create artificial results. Use of grid-obtained measures for comparison purposes thus requires controlling for type of pathology. Next, individual differences between patients with the same pathology must also be taken into account. Relevant differences include fixational ability, cooperation, age, and other factors listed in the Appendix. Age is an especially important variable to consider at the Center since many of the patients are of advanced age, which tends to increase variability of results when measuring visual fields. Finally, in the Esterman study, standard stimulus and testing conditions (using a Goldmann apparatus with a 0.5 white test object) were used so that the results of individual fields could be compared without method confounds. At the Center, testing conditions are thoroughly controlled and standardized using the Fieldmaster (See Appendix); however, not all patients are tested at the same stimulus intensity. For clinical purposes, one "set" stimulus level would not be of much use. For example, a patient with cataracts or corneal opacity would be tested at a higher stimulus intensity for threshold response. Consequently, when measuring the fields of a patient population stimulus intensity must remain constant for a given pathology.

In future work, the Center expects to attempt using the information provided by the Esterman grid to help determine a partially sighted patient's functional ability. By combining the patient's visual acuity and percentage of relative functional field with the location of scotomas included, it may be possible to predict visual environmental adaptation problems; if so, the procedure would yield a descriptive and prognostic tool of great value.

Electrophysiological Evaluation

Initial electrophysiological assessment made use of a 4-channel signal averager, designed specifically for clinical applications, from the Nicolet Instruments Corporation. In addition to the averager, a visual stimulation system and X-Y paper plotter were acquired. Utilization of this equipment made it apparent that, although suitable in the clinical setting, the averager itself lacked the versatility necessary to accommodate a research program. That is, the equipment yields only a crude paper-plot of the obtained cortical potentials and provides no way of storing the digitized waveform data for future analysis. We alerted Nicolet to this problem and, with their cooperation, exchanged our clinical averager for their 1170 signal averager (providing the additional flexibility essential for a rigorous investigation of research-related problems). At the same time we purchased a magnetic tape system which would allow us to store digitized data from both single trial and summated waveforms for subsequent analysis purposes. We received this equipment in January 1980. Thus the Center's electrophysiological equipment currently includes a 4-channel signal averager and necessary amplifiers, a magnetic tape drive and controller, a visual stimulus presentation system and controller, a photostimulator and strobe, and an X-Y plotter.

VERs and ERGs are assessed in instances where such information provides the clinician with objective assessments of global function of the visual system. To date approximately 30 clinical VERs and ERGs have been completed on patients whose etiologies include prenatal rubella, Marfan's syndrome, retrolental fibroplasia, senile macular degeneration, cataracts, and various retinal diseases. Our electrodiagnostic capabilities are also used routinely to evaluate visual function in persons who are unable to communicate verbally what they see, including pre-verbal children and multihandicapped individuals of all ages. In most cases electrophysiological assessments enable the low vision specialists to identify various stages of visual processing as potential problem areas. These areas relate to gross retinal function, more specific macular function, and the integrity of visual pathways which transmit these electrical signals to the major projection areas of the occipital cortex. Clinically the ERG has been shown to be especially useful in evaluating the functional state of retinal epithelium. Specifically, this measure is helpful in diagnosing instances of retinal detachment, central retinal artery or branch occlusions, carotid insufficiency, tapetoretinal degenerations, toxic retinopathies, and macular degeneration. These diseases typically result in decreased amplitudes in the ERG.

VER measurements are particularly suited for addressing problems where knowledge of macular function is of major importance. Not surprisingly, many patients who could benefit from evaluation by these electrodiagnostic techniques fall into the over 60 age group. Moreover, previous research in this area has shown that amplitudes and latencies of response both in the VER and ERG exhibit reliable changes as a function of age. Consequently it becomes imperative that normative electrophysiological measures be gathered and analyzed for the age groups to be evaluated. Center efforts are currently being directed toward establishing such clinical norms.

In addition to the clinical applications of these electrical measures, several areas of investigation have emerged for research consideration. These include implementation of contrast gratings as viable visual stimuli for low vision research, applications of electrophysiology in assessing gross field defects, and more extensive investigation of VER applicability in determining extent of macular function, particularly with respect to patients suffering from cataracts. The latter role for VER assessment assumes added importance when evaluation of macular function becomes a critical issue for individuals who are considering cataract removal as an alternative to their present visual function status. The benefits and limitations of such an objective assessment of macular function present clear problems for further investigation: cataracts, by their very nature, preclude full perception of the visual stimulus; so, when the cataract is sufficiently dense, the elicitation of a VER becomes problematic and the effectiveness of the measure is questionable under these circumstances. Research is required to establish the parameters under which such evaluations may provide clinically meaningful and useful information.

Prescription and Fitting of Visual Aids, and/or Recommendations for Environmental Modification

After studying the case history and discussing with the patient the individual's objectives and significant vision-related environmental problems, the low vision specialist works with the patient to determine which visual aids will help to accomplish those goals. Most patients seek assistance for near vision activities like reading, writing, and continuing hobbies, crafts, or various home tasks. Patients also express a need for aids to help them with distance viewing tasks such as recognizing faces, watching television and movies, reading signs, and traveling about. The low vision specialist tests different visual aids to see which most adequately meet the needs of the individual patient. Every effort is made to prescribe visual aids for specific goals and specific visual tasks. Patients are asked to bring with them some materials, e.g., needlework or sheet music, associated with specific tasks they wish to accomplish. The Center also has a supply of reading materials, as well as a commercial color television set, street sign, bus sign, and other objects associated with common patient goals. On the other hand, patients with no specific visually related goals may require no prescribed visual aids.

A visual aid loaner program has been instituted at the Center. With this program, we can cost-effectively assess patient acceptance of different types of aids. This process is usually initiated at the patient's first visit. We may loan a patient one or more aids for a period of approximately two to three weeks to use at home, work, or school. At the end of the trial period we assess the patient's performance with these aids and prescribe or modify as needed. This has been helpful because we cannot replicate at the Center the environment in which our patients live, work, or study. When loaner aids are provided, patients sometimes tell us that the aid works in the office but not at home. These patients may need additional training and/or an additional aid. In any event, it is important to determine what aids work adequately in the task environments specified by the patient. Finally, in cases where a person's visual performance may be enhanced by lighting modifications, a lighting evaluation is done by an assistant. The recommendations are noted in the file and checked by an environmental adjustment counselor.

The fitting of aids varies considerably from one patient to the next, depending on many factors including the type of aid, the task(s) for which the aid is to be used, and the patient's ability (including motivational factors) to respond favorably to training. For example, telescopic spectacles require alignment to the angle that will provide the maximum visual field. Best visual acuity may take place using eccentric viewing, as is the case with patients having central scotomas. In the more sophisticated telescope systems, e.g., expanded field telescopes, a minor error in alignment may result in significant loss of field of view. Microscopic spectacles need careful positioning as well. Fitting aids takes approximately 15 minutes per patient, per aid, for the initial trial and for each subsequent adjustment.

In addition to prescribing and fitting aids, the low vision staff has made it a practice to advise patients on ways in which they can modify their environments to minimize visually related problems. Included with the introductory information given to each patient is a statement of "Household Hints" (Appendix I) that discusses color contrast recommendations (e.g., pouring dark liquid into a light colored cup), the importance of proper lighting (e.g., setting a high intensity lamp at the dinner table in such a way that it illuminates the patient's plate or other pertinent areas of the table without sending any light directly into the eyes of persons sitting at the table), and the need for good organization throughout the house (e.g., color coordinating clothing in the closet). Typical modifications recommended include types of lighting sources to be used (use of Vitalite or high intensity lamps and their placement), relocation or removal of potential hazards (toys and extension cords), and the placement of tactile or highly contrasting strips on steps, railings, and banisters. Environmental modifications should be regarded as ways of enhancing visual function with or without the additional help provided by visual aids.

Training in the Use of Visual Aids

The initial training with all visual aids (both optical and non-optical aids) is given by the low vision specialists themselves. The length of time that a low vision optometrist spends on this activity per patient, per aid is quite variable and depends upon many factors. These factors include the type of aid, the specific task that is to be performed with the aid, the relative ease with which the task is initially performed, and the patient's previous use of aids. Other variables include patient motivation, manual dexterity, ability to comprehend and follow instructions, and also the possible existence of unrealistic expectations on the part of the patient. Patient fatigue is another critical concern.

On the average, the low vision specialist spends approximately 5-10 minutes per patient, per visual aid. Often this session is followed by an additional training period conducted by a low vision assistant under the direction of the specialist. The time spent per patient, per aid again depends upon the factors mentioned above. The assistants estimate that, on average, they spend 15-20 minutes per patient, per aid; however, when a closed circuit television system is involved, the training session may approach or exceed 30 minutes. Frequently training sessions involve teaching patients not only how to handle and manipulate the aids properly, but also how to use illumination properly in conjunction with the aids. Additional instruction, of course, involves additional time expenditures.

When patients return to the Center for subsequent visits with the low vision specialists, they are usually given further training in the use of the prescribed aids by either the low vision specialists or their assistants. Again, on average, the specialist may spend 15-20 minutes per training session and the assistant, 20-30 minutes per training session. Some patients require training beyond that described here. Such extended training is provided on an individual basis and is usually conducted by one of the low vision assistants.

Eccentric Viewing Training

Eccentric viewing is an efficient means of generating information using the peripheral vision of the patient who has a central scotoma. While the peripheral system comprises 98 percent of the retina, it only provides a vague awareness of images falling upon it. This vague awareness is the result of the rapid decrease in visual acuity that occurs as an image is moved from the fovea to the periphery (Goodrich and Quillman, 1977).[*] During the period covered by this report, low vision specialists at the Center have devised a method for finding the best angle for eccentric viewing for a patient with a central scotoma and have employed it to train distance viewing. In general, the patient is trained to use that remaining area of visual field that is closest to the center of the fovea, since this area should provide the best acuity.

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[*] Goodrich, G. L., and R. D. Quillman, "Training Eccentric Viewing," _Visual Impairment and Blindness_, Vol. 71, No. 9, November 1977, pp. 277-281.

Two point sources of light (penlights) of different colors are used in locating best eccentric fixation. The patient fixates on one of the lights (A), which is held stationary approximately one meter directly in front of the patient's eyes. The other light (B) is moved slowly away from A along radial lines at 15° intervals. The patient is directed to inform the assistant when B appears brighter than A. When the brightest such point is found, the assistant holds B on the "area of visual space that corresponds with best vision" and has the patient reach out and touch both A and B to physically notice where they are in relation to each other. Recall that B appears brighter than A. Two angles are needed to describe the location of B relative to A, namely, ϕ, the angle subtended at the eye by the line segment $\overline{AB}$, and, θ, the angle formed by the line segment $\overline{AB}$ and the horizontal axis passing through A and lying in the plane that is normal to the line joining A to the patient's eye. For example, if B is located to the right of A and $\phi = 10°$ and $\theta = 0°$, the patient is told to look horizontally 10° to the left of an area he wants to see. This initial training procedure can also be adapted to a bowl type perimeter that is used for measuring kinetic visual fields. Although the angle of eccentric viewing will remain the same, the distance between the object to be viewed and where the patient should look for it, measured in the plane of the object that is normal to the line joining the eye to the object, will increase as the distance increases between the patient and the object to be viewed. For example, if the patient wishes to see the nose of a person who is standing one foot away from him, he may only have to look one inch to the left of the person's nose (measured in the plane of the nose) to see it more clearly than when looking straight at it. However, if the person is five feet away, the patient then has to look five inches to the left of the nose (measured in the plane of the nose) to see it more clearly. The patient must become accustomed to this variation of eccentric viewing with distance so that his/her eccentric viewing will be more natural.

To help the patient in this training, the low vision assistant has the patient view objects at varying distances. These training sessions normally take 20-30 minutes. They continue once every two weeks until the patient masters the eccentric viewing skill; usually three or four sessions are required. However, some patients may have already started viewing eccentrically before coming to the Center; after they know in some general sense the location of the area in which they should fixate, these patients may only need an initial training session to learn the optimum area in which they should fixate. Their progress is then evaluated at the time of their normal follow-up visit. Factors which contribute significantly to variation in the number of training sessions necessary to master eccentric viewing are prior practice, fatigue, and motivation.

Patients with central scotomas who are highly interested in reading are also trained to read using peripheral vision (see Appendix C6). This training procedure is an adaptation of that used by Krister Inde, principal and low vision therapist at the rehabilitation center for visually handicapped adults, Kristinehamn, Sweden. Patients with an eccentric viewing angle of 10° or less, directly above, below, to the right, or to the left of the word they wish to read are the best candidates for this training. Viewing eccentrically for distance is a simpler task and also serves as a good background for learning to read while viewing eccentrically. Therefore, patients are taught to master distance eccentric viewing before they are taught how to read eccentrically.

Exercise 1 of the training procedure for learning to read eccentrically begins with a pretest that determines how many letters a patient is able to see with one fixation. This test is given again at the end of the training to determine if the patient shows an increase in the number of letters "taken in" in one fixation. The second part of Exercise 1 consists of practice in fixating eccentrically. Exercise 2 of the training reaffirms the direction and angle at which the patient should fixate when reading. The remainder of this and subsequent exercises concentrates on practice in reading eccentrically. Here the material to be read is accompanied by visual guidelines that give the patient additional help in learning to view eccentrically. Reading practice begins using one- or two-letter words. Word length is permitted to increase gradually, and the rate of word length increase depends upon the patient's rate of learning. When the patient is competent in reading words, he/she progresses to sentences separated into small sections or paragraphs. After this, the patient advances to reading half pages and then to full pages.

A program of gradual increases in reading complexity helps minimize patient confusion, and permits the training exercises to be a positive experience. After the patient is able to fixate easily and read a whole page of material with visual guidelines, it is possible to move to material without such lines. Three different sizes of print are available for use in this training program, and the one chosen for a particular patient is a function of his/her visual acuity. Some patients have been able to move to a smaller print size in the course of their learning to read eccentrically. Frequently the amount of training required for reading eccentrically is less than that for distance eccentric viewing. Usually an initial session with one follow-up check is all that is necessary because it is easier for the patient to practice at home with reading exercises than with distance viewing. An eccentric viewing test is given during the subsequent visit, and an improvement in the patient's ability to fixate is usually noticed. If not, the patient is asked to resume practice using text with visual guidelines until an improvement is noted.

Case Conferences

Case conferences in which staff from the varied specialities meet to review patients who are scheduled for appointments for that day, or who were seen earlier in the week, were instituted in February 1980. The goal of these conferences, which are held twice a week, is to develop more comprehensive, individualized, and integrated treatment plans by creating the opportunity for input from each discipline (e.g., optometry, psychology, orientation and mobility, information and referrals, PEACers). Notes of process and outcomes of the case conferences have been kept in order to evaluate how well the objectives of the meetings are met (see Appendix P).

During the quarter in which they have been implemented, case conferences have served to increase the number of referrals from the basic optometry program to other services, especially to the community resource/outreach coordinator and to the psychological services staff. The conferences have also been generally useful in increasing staff knowledge of one another's activities. In particular, these meetings have increased the involvement of part-time staff in the overall program. Because some programs are primarily staffed on a part-time basis (psychology and orientation and mobility, most notably), there has not always been sufficient opportunity for interchange between staff of those programs and other Center personnel. Case reviews bring these part-time staff up to date on patient progress, and allow them to give feedback on both patients and Center procedures.

To date our experience with case conferences has been encouraging; we believe they improve services to patients while they increase staff knowledge of multiple issues surrounding the delivery of specialized low vision services for the partially sighted. The plan for the upcoming year is to continue case conferences at the current level. It is expected that it will be possible to review almost all patients seen at the Center, thereby facilitating a coordinated approach to rehabilitation.

Follow-up

One of the unique aspects of the Center as a model service is the follow-up attention given its patients. Follow-up visits to CPS are scheduled as needed, and all visits occurring within six months of the first appointment are considered as part of the initial evaluation and treatment. Later visits are necessary for patients whose vision or visual demands are changing. For example, patients with visual changes caused by progressive optic neuropathy, maculopathy, or diabetic retinopathy may require an increase or decrease in power or change in type of visual aid; patients whose visual demands are changing via job training or schooling also may need ongoing care. However, most patients are scheduled for follow-up visits six months after their first visit and at either six-month or yearly intervals after that. On the other hand, patients receive no follow-up if they are not interested in any of our services or if their vision is either too poor or too good to fall within our purview.

Personal Environmental Adjustment Counselor (PEAC) Program. Approximately six months after the initial low vision evaluation, a Personal Environmental Adjustment Counselor (PEACer) telephones the patient to set up an appointment for a visit at the patient's home, school, or worksite, whichever is most appropriate with respect to the low vision aids prescribed and goals that were projected. This follow-up visit is intended to ensure that partially sighted patients continue to maximize their use of residual vision after regular Center visits have terminated. Follow-up and PEACer forms are found in Appendixes F and G.

At the beginning of each month, PEACers refer to the appointment book in order to note which patients are ready for a six-month follow-up visit (e.g., in March 1980, the PEACers contacted patients whose initial low vision examinations occurred in September 1979). After the list is compiled, PEACers consult the files to determine which patients are "appropriate" PEACs and then designate them as first or second priority. The criterion for a first priority adult PEAC is that the first and second case histories are complete, while PEACs of partially sighted youngsters are done routinely approximately six months (and sometimes less) after the initial visit. A second priority PEAC has an incomplete first or second case history or lives in the outlying area from the Center. If three or four patients live within close proximity of each other but in an outlying area and can be scheduled on the same day, they become first priority PEACs. Patients may be considered inappropriate candidates for a PEAC if they refuse a visit in two consecutive phone contacts, have cancelled an appointment three times, do not speak English, or are considered to be fully sighted.

After arranging an appointment, the PEACer further examines the patient's file to determine what visual environmental adaptation problems (VEAPs) were regarded as important, what visual aids the low vision optometrist may have prescribed to meet the patient's needs, and what treatment goals had been negotiated between the patient and optometrist. The PEACer may also consult with the optometrist to discuss the possibility of changes in the patient's visual status and to determine guidelines for evaluation of the patient for follow-up referrals. A member of the psychology staff might be consulted if, in the telephone conversation, the patient has indicated depression or emotional problems. The PEACer then begins a follow-up report on the patient by listing specific tasks for which aids were prescribed on an appropriate form (see PEAC Observation Forms, Appendix F3). During the PEAC visit, the patient is asked to perform these tasks while the PEACer assesses their adequacy from the standpoint of visual function. There is sometimes a noticeable difference in patients' behaviors in the clinical setting versus the on-site location. Patients may be more relaxed, at ease, and open to suggestions in their own everyday environments. Further, once aware of the Center's genuine interest in their progress, patients are frequently very responsive and willing to work with the visual aids. During initial low vision services, the clinical environment provides an "ideal setting" to elicit optimal visual responses from patients. However, patients' home, school, or work environments vary with regard to types and intensity of illumination and to conditions affecting contrast sensitivity. Therefore, patients' actual environmental conditions are not actually duplicated during the low vision evaluation. The PEAC visit affords an assessment within patients' environments.

If during a PEACer assessment, the patient reports difficulty with an aid, a less demanding task may be substituted in order to evaluate the patient more closely. But once task performance has been fully evaluated and recorded, the PEACer will spend time retraining the patient in the correct use of the aid if necessary. For example, one woman who complained that her microscopic spectacles were causing dizziness had been noted in the file as resistant to close working distance. After the PEACer demonstrated how close the reading material should be held to the eyes, and had worked with the patient for a while, the patient found she could read undistressed with her microscopic spectacles. Sometimes patients do not use a prescribed aid in a task at all, saying the aid is of little or no help. If the patient is not benefiting from the aid, a change in focal distance or illumination may be all that is needed. On one occasion, a woman was convinced that her glasses were of no help. She started to read and as she was reading the PEACer gradually moved her reading material and her lamp closer. The woman began to read rapidly, finished the paragraph, and said, "See, I can't read a thing with these." Thereupon she realized with surprise that she had in fact read successfully. Finally, the PEACer may bring along a few of the more common non-prescription aids (e.g., typoscope, occluder, large print phone dial and checks) in case it appears likely that the patient might benefit from one or more of them.

The PEACer program has undergone a number of changes since its inception in spring 1979. Initially the PEAC visit involved only the evaluation of the patient's use of prescribed aids, identification of patient specific problems, and PEACer observations of the patient to substantiate recommendations for future Center services. Currently the PEAC visit includes six different phases:

(1) initially the PEACer administers the psychosocial post-test and patient satisfaction questionnaire (to adult patients);

(2) next, the patient is asked to perform a set of tasks as described above;

(3) the PEACer and the patient discuss the use of the aids to determine the frequency and duration of use;

(4) the PEACer may retrain the patient if necessary, in the use of one or more visual aids;

(5) the PEACer evaluates the visited environment in terms of safety hazards and lighting and makes recommendations as required;

(6) last, the PEACer reviews the original VEAPs as noted by the patient on the initial visit to the Center. When possible, recommendations are made to alleviate problems the patient is still experiencing. These may include instruction in living skills or referral for further Center services.

Due to its lengthened protocol, the PEAC visit now takes an additional 30 minutes or more, extending the follow-up session to at least an hour.

The follow-up report is completed when the PEACer notes observations made during the visit and fills out the follow-up referral form, if needed (see Appendix F5). Patients generally are receptive to PEACer referrals for further services (e.g., mobility instruction). In a number of cases, patients were not interested in these services when they first came to the Center. Perhaps the clinical setting and the amount of information they receive may be too confusing for some. In the six-month period after their initial low vision evaluation, however, many patients become more accepting of their disability and more interested in pursuing additional activities. PEAC findings are presented at case conferences so that all future services may be coordinated among the various service providers. PEACer concerns related to special environmental sites are discussed below in more detail.

School PEACs. As with all patients, children who receive Center services are scheduled for a six-month follow-up visit. However, the PEAC visit takes on a different perspective for patients who are of school age. The main purposes of school PEACs are to evaluate the students' use of prescribed aids in the regular classroom as well as in the visually handicapped (VH) resource room, to facilitate the acceptance of aid use in the regular classroom, and to make recommendations to teachers that will help students make maximum use of their residual vision. In preparing for a school visit, PEACers refer to the doctor's letter of report to the school, as well as to the patient file. A letter sent by the Center to the regular classroom instructor and parents contains the results of the student's low vision examination, including near and distant acuity, a list of the aids prescribed, limitations or restrictions imposed by the aids, and recommendations for incorporating the child into the most beneficial and normal classroom situation feasible, i.e., the least restrictive environment. We regard the "least restrictive environment" as that educational environment that allows the handicapped student to receive educational opportunities as fully comparable as possible to those enjoyed by nonhandicapped students.

The visit is arranged with the permission and cooperation of the student, parents, regular classroom teacher, and VH and orientation and mobility instructors. Initially the PEACer works with the student and evaluates the use of the prescribed low vision aids in both the regular classroom and the VH resource room. If appropriate, the PEACer will attempt to resolve any problems leading to improper use. Second, a slide presentation is shown to the classmates and instructors of the student to increase their awareness of the needs of the partially sighted and to acquaint them with the multiple uses of different low vision aids, including those dispensed to their classmate. Last, a collection of the more commonly dispensed aids is circulated among the students so that they may be encouraged to inquire more specifically about their uses and to develop a better understanding of persons who require such aids. These presentations have been very successful. Partially sighted students enjoy the special attention, and their fully sighted classmates show great interest. Sometimes the school PEAC is so well received that the school administrator requests a presentation to the entire school. The primary goal of all low vision services for students is to enable them to attain the same educational outcomes as their fully sighted peers.

Work-Site PEACS. In other cases, a PEAC visit is conducted at a patient's worksite. In dealing with working-age adults, it becomes important to allow the patient to determine most of the conditions/terms of the visit. Usually the patient wishes to impose a time limitation on the visit and restrict all activity to a secluded area. Due to these two changes, work-site PEACs are less personalized. Questions are answered and tasks are completed in a very straightforward and efficient manner. The rapport that can develop between PEACer and patient in home surroundings is less likely to develop within the confines of the working environment. In a few cases, however, the work and home site were one and the same. One patient who was a "ham operator" for the government at his home became so enthusiastic when the PEACer asked him to demonstrate his operational unit that he mistakenly contacted someone in Europe while using his aids to show the PEACer the control dials.

Informal comparisons of patients assessed at home-based versus work-based tasks suggest that working patients may be more determined to master skills involved in successfully using prescribed low vision aids. This difference may perhaps be attributed to more established goals held by working patients entering the Center program, or to their desire to maintain a working position. The objective of the work PEAC is to evaluate the patient's completion of tasks representative of the demands of the patient's job.

PEACs with Elderly Patients. In contacting older patients for a PEAC appointment, it is often necessary to recall to them their past association with the Center. Further, with older patients the PEACers must alter the pace and style of their presentation. In administering post-test questions, PEACers must be prepared to be more systematic and repetitious in approach and more persistent in eliciting a response. Because these patients may have suffered a hearing loss as well, the PEACer often needs to speak more loudly and more slowly while being especially careful not to influence the patient's response.

The location and type of living situation are more varied with older patients (e.g., retirement hotel, nursing or convalescent home, boarding house).

In situations where a number of other individuals are present, the patient may experience a certain amount of peer pressure and the PEACer must anticipate a variety of patient attitudinal responses (embarrassment, shame, and indifference, to name a few). Whatever the circumstances, the PEACer attempts first to gain the confidence of the individual. Often this end is facilitated by the fact that the older patient looks forward to having a "visitor" in whom to confide. On the other hand, one woman was so dismayed by the thought of people in her building learning of her visual problem that she would not allow the PEACer to speak until she was in her apartment with the door closed. Sometimes the physical surroundings themselves pose a challenge to patient and PEACer alike. One older patient was a retired cinematographer, and his apartment was so cluttered with memorabilia that there was only one "clear path" through the living room--a true testament to his mobility skills. However, the lack of organization prevented him from finding any of his visual aids.

In general, when dealing with older patients, the most important PEACer skills are patience and the ability to listen and empathize without losing sight of the goals and objectives of the follow-up visit.

In summary, from evaluation to training and follow-up, the Center's partially sighted patients are receiving thorough, comprehensive, and highly advanced low vision services designed to meet their special needs. Before concluding our account of low vision service delivery, however, it would be well to highlight special considerations involved in treatment programs aimed specifically at different age groups whose problems, needs, and goals sometimes differ a great deal.

Special Considerations Regarding Services for Older Adults

As we have indicated, a substantial proportion of Center patients (71 percent) are age 60 or older. Thus, in addition to implementing comprehensive low vision evaluation procedures that rely on a range of special as well as standard techniques, the optometric staff has given concentrated attention to designing its procedures to meet the needs and abilities of an older population. Supplementary AoA funds have been used for this purpose. We believe that these efforts have been rewarded. For the most part, patients have appeared satisfied with the thoroughness of the evaluation and facilities. Problems have sometimes arisen with respect to the accuracy of test results, primarily due to poor fixation capabilities of persons with central scotomas who must view eccentrically, and of persons who exhibit nystagmus. In some cases, visual aids have not worked as well as patients had expected. However, even in those cases, patients often express their appreciation for the care and thoroughness of their evaluation and testing.

A high percentage of older patients come to the Center initially because of problems with near-vision activities. Since older adults are often less mobile than younger persons (even with the help of distance-viewing visual aids), they are quite dependent on activities that require good near-point visual acuity to occupy their time. This is reflected in the fact that reading is by far the most commonly stated objective when an older patient first contacts the Center. Other objectives common in this age group include managing financial affairs, writing, doing needlework, playing cards, playing musical instruments, watching television, and viewing sporting events and theatrical performances. In addition, some older patients aim at traveling independently, shopping, and housekeeping. We believe reading is the most commonly presented objective partly because of the [mistaken] notion held by many patients that if they can be restored to a visual level adequate for reading, they will also be able to perform most other tasks. A substantial portion of the initial evaluation is spent educating older adults about their visual conditions, primarily to enhance their understanding of their capabilities and limitations and to reassure them, when applicable, that they will not become totally blind. These patients also frequently need to be educated about the capabilities and limitations of visual aids prescribed for their use.

Because many older patients may be discouraged by having to adapt to what they perceive to be complicated or unusual visual aids, the aids prescribed for their use are frequently kept as simple as possible. Visual aids prescribed for these people are thus chosen to resemble as much as possible the aids they are using or have recently used. For example, if a patient has adapted to a close working distance and the visual disorder has become worse or visual demands have increased, that individual will more likely succeed with a microscopic spectacle than with a hand-held device that would entail some sacrifice of visual field. Similarly, an older patient who has never been able to adjust to a close working distance and who has been using hand-held magnifiers since the onset of the eye pathology will do best to continue with that type of aid. In contrast, older patients suffering from arthritis are generally able to perform visual tasks with more ease when they use stand magnifiers that do not require a steady hand to maintain the proper focal distance.

Among near-vision aids prescribed for older adults, the most common are microscopic spectacles in 2x, 4x, 6x, and 8x powers. The power is determined by relating the patient's current level of visual function to that which is necessary for the task(s) for which the aid is prescribed. Sometimes these microscopic spectacles are prescribed in the form of a bifocal (e.g., to read a newspaper), with the upper half containing one power for scanning headlines and the lower segment incorporating a stronger power for reading smaller print.

For patients with visual losses that result in central scotomas, special lens designs may be indicated. These patients often require aspheric lens designs that improve their reading efficiency or fluency relative to a standard lens by providing a larger field of view. Other spectacle near aids commonly prescribed are prismatic half eyes, loupes, and telemicroscopes. Telemicroscopes are the aids recommended for patients desiring to accomplish tasks that require magnification and relatively large separation between the aid and the object being viewed, such as reading music and playing a musical instrument. Patients who use this type of aid are generally highly motivated to perform the task for which the aid is used, and in many cases they eventually apply the telemicroscope without the reading cap for viewing objects at a distance. Hand-held near aids such as aspheric hand and stand magnifiers are also frequently recommended; whether or not they are prescribed with self-contained sources of illumination depends on the patient's contrast sensitivity, glare sensitivity, available illumination, and etiology, as well as the availability of other sources of illumination where the patient is expected to use the aid.

Distance-viewing aids are less typically prescribed; fewer than half of our older patients exhibit a need for them. For those who do require distance visual aids, the most frequently prescribed are full diameter and bioptic spectacle telescopes, both focusable and nonfocusable systems. These have been recommended for recognizing faces, watching television, viewing theatrical performances and sporting events, reading street and bus signs, shopping, and general increased distance acuity.

Several older persons who were unable to travel independently before receiving their distance-viewing visual aid are now moving about more comfortably because they can identify the number of a bus and ascertain the status of a traffic light. However, other older adults who have had visual losses for extended periods of time have developed techniques for coping that make them less receptive to accepting visual aids. For example, some patients depend on a friend or neighbor to read the daily mail to them and may feel that using a visual aid would deprive them of a social contact that may be more important to them than the privacy provided by reading the mail alone using a visual aid; or patients may also mistakenly feel that they will lose some of their "blind benefits" if they were to use a visual aid that improves their vision.

It is not uncommon for multiple aids to be prescribed for older patients. Multiple reading aids are often recommended to help the patient with different print sizes, contrast situations, and available illumination. Those who receive distance aids as well as near aids are generally the healthier and more energetic patients who are highly motivated to perform specific tasks. For example, one woman who came in search of aids to assist her in spotting and identifying wildflowers and then framing them under glass is quite pleased with the different aids she has learned to use. This woman was prescribed a 3.0x bioptic telescope for identifying the flowers and reading caps of 2.00 D, 3.00 D, 4.00 D for various tasks associated with them. Similarly, an older businessman (age 67) who was continuing to work needed to recognize people at board meetings at a distance of approximately five feet. He received binocular expanded field telescopic spectacles and is quite pleased with them. He also uses a CCTV system for extensive reading and bifocal microscopic spectacles for short duration reading.

In general, fewer CCTV systems are received by older than by younger patients, but some still are prescribed; here, motivation is a very significant factor. For example, a woman in her middle 80s whose husband recently died was left with a large estate, and mounds of documents, contracts, and other legal papers to read. She had unsuccessfully tried using microscopic spectacles. When her vision had deteriorated and her strong reading glasses would not suffice, her optometrist sent her to CPS. After seeing and using a CCTV system here, she knew she wanted one; moreover, she was so excited about it that she wanted to secure one for her brother who also suffered from macular degeneration.

Finally, illumination is an especially important consideration with older adults, for several reasons. Most older patients require higher levels of illumination due to senile miosis, loss of clarity of the media, or other normal aging changes. However, some patients may need less illumination due to increased problems in coping with glare and constast. Vitreous opacities, retinal scarring, lenticular remnants, corneal leukomas, and certain complications arising from the use of intraocular lenses, result in veiling glare (intraocular light scatter), which ultimately interferes with visual performance under conditions of high illumination. Media opacities likewise reduce contrast, and therefore simply increasing ambient illumination may not necessarily increase contrast due to the direct light response on the pupil. Because of older patients' diverse visual needs, work with illumination is highly individualized and requires trial with various types and combinations of lamps and aids.

Special Considerations When Examining Partially Sighted Children

When performing a low vision evaluation, it is important to remember that most partially sighted children have short attention spans--especially those who are multiply handicapped. Therefore, every attempt is made to give simple instructions and to conduct procedures as rapidly as feasible. Specialized equipment for examining this population includes pediatric visual acuity charts, near vision testing cards, toy charts, number matching charts, toy occluders, and fixation toys. Other specialized items used are lens bars for retinoscopy, anaglyphic devices (red-green dissociation) for testing of binocular status, and two different optokinetic nystagmus drums (regular and pediatric) for objective determination of visual response. Nevertheless, children's vision is often very difficult to assess because of their inability to relate their vision to any visual norm. This often results in a child's being misunderstood by parents, educators, and health professionals. Some partially sighted children are erroneously thought to be mentally retarded because of their delayed development in areas directly related to vision. For example, since the degree of residual vision influences motor development, a partially sighted child may walk later than other children and with more hesitancy. As an instance, one Center patient who had lowered acuities and severely restricted visual fields had been misdiagnosed as mentally retarded at age three. When she entered school she was found to have normal mental function, her development having been delayed because of poor vision. This type of misdiagnosis is not uncommon among partially sighted children and could lead to unwarranted restriction of their educational opportunities.

It is therefore imperative to identify, assess, and train partially sighted children as early as possible in order to prevent behavior and psychosocial problems as well as academic failures. Parents must be provided with information that will help them regulate their children's activities wisely; for this purpose they need to learn about their children's visual capabilities in order to gain a better understanding of their abilities and limitations. Many parents are overly protective and may unnecessarily restrict their child's activities because of failure to understand the range of usefulness of residual vision. For example, the parents of a partially sighted six-year-old who rides his bicycle at home with minimal difficulty questioned the safety of their child's riding his bicycle to school. But his route to school was rural, he had a friend to ride with, and ought to have no problem even though his vision is impaired. Another child was withheld from physical education classes despite her need for gross motor activity development and skills. With each child evaluated at the Center, every effort is made to counsel the parents so that the child's development is enhanced and not hindered. On the other hand, parents need to be aware of the possible hazards the child may encounter; for instance, avoidance of contact sports is especially important for partially sighted chidren with only one good eye and for those at risk of retinal detachment.

Low vision treatment for children at CPS is a function of their visual disorder(s), their visual environmental demands, and the current status of their vision. Most partially sighted children have been visually impaired since birth. Their vision may deteriorate through the developmental years (as in specific cases of degeneration) or it may remain stable (as with congenital cataracts). Even in the case of progressive visual loss, however, children frequently adapt well to their environments. In some circumstances, visual aids can enrich a child's life even at an early age. For example, one five-year-old patient uses his 6x telescope at home and while riding in the car, and he uses his 8x telescope at the museum and the zoo. He also has a closed circuit television system with which he reads, writes, and draws, and a 10x illuminated focusable stand magnifier for reading when his CCTV system is not available. The ability to vary the focus of the stand magnifier is important in the treatment of aphakic and pseudophakic eyes.

In most cases, school-aged patients (excluding aphakes and cataract patients) have sufficient accommodative amplitude to perform most near-point tasks encountered in the classroom. However, for adequate magnification, a very close working distance--which can result in postural tension and eventual chronic back disorders is often required. Reading stands with inclined book supports are typically prescribed to alleviate this problem, but they are sometimes rejected or used only temporarily. They are not always available in classrooms, and some are not portable. However, they are usually appreciated by patients who have already begun to experience back and neck distress. Occasionally yellow acetate filters are used for school children with lowered contrast sensitivity, for example, to improve the resolvability of low contrast mimeographed sheets. Further, stand magnifiers are prescribed for many near-point activities, especially for older school-age children. Unlike older adults, children do not often need an increase in illumination, and since nonilluminated stand magnifiers are lighter in weight and more manageable by children, they are most often prescribed for them.

As children grow older and their visual demands tend to increase, their need for more sophisticated visual aids likewise increases. Bioptic telescopes and hand-held telescopes are prescribed for viewing chalkboards, slides, movies, or wall-mounted charts. However, due to peer pressure and to the fear of looking "different," telescopic spectacle aids may be rejected in favor of hand-held telescopes when the latter can serve the same purpose. Spectacle-mounted telescopes usually incorporate the patient's refractive correction and increase visual acuity beyond the capability attained from the refractive correction alone. For example, an 11-year-old patient who was moderately myopic was prescribed a 3x bioptic telescope that incorporated his refractive correction. The carrier lens did not incorporate any Rx, and thus the patient's near visual acuity was not impaired by any distance refractive Rx. Prescribing school aids for children is facilitated when the child is accompanied by his teacher, who may contribute additional information about classroom visual demands. A number of teachers of the visually handicapped and orientation and mobility instructors have visited the Center with their students.

As with adult patients, children who receive Center services are scheduled for a six-month follow-up call. But for patients who are of school age and younger, the PEAC visit takes on a different perspective. As a part of the PEAC evaluation, we are interested not only in assessing the child's motivation and adaptive capabilities, but also the family's interest, encouragement, and supportive efforts. During the formative years the child's and parents' lives are so finely intertwined that it is essential for all family members to work toward the same positive child development goals. Therefore it is necessary to observe the child interacting with parents to make the best kinds of recommendations for maximizing the use of residual visual potential.

An intermediate follow-up of the aids used for school occurs three months past dispensing, when an evaluation form is returned by the teacher. This informs us as to whether the student is using the device(s) properly, i.e., at the right distance, for the right tasks, and with the proper illumination. It also tells us the teacher's impression of the students motivation to use the aids and the reaction of classmates. In nearly all cases, classmates' reactions primarily manifested interest, curiosity, and acceptance. Peer interest has prompted us to include in the PEAC program a general demonstration of low vision aids, including but not limited to those used by the patient, for students in the patient's class.

The main purpose of the regular six-month PEACer follow-up is to evaluate the use of aids prescribed by CPS and to solve any problems leading to their improper use. This may involve further training with the student, as well as supplying instruction or caution to the parents and/or teacher. The primary aim of all low vision services for students, as we have noted, is to equip them so they can make use of the same educational opportunities as are available to fully sighted children. Before visiting the student-patient at school, the PEACer obtains a general idea of what to expect by referring to the Center's letter of report to the instructor. The letter sent from the Center to the school contains the results of the student's low vision examination, including near and distant visual acuity, a list of the aids prescribed, the limitations or restrictions imposed by the aids, and recommendations for incorporating the student into the most beneficial and normal classroom situation, i.e., the least restrictive environment with which the student can successfully cope. In addition the PEACer observes and notes aspects of the student's social environment, especially interactions with teachers and peers.

Special Considerations When Examining Working-Age Patients

Partially sighted working-age patients require rehabilitation to visual levels specific to their vocational domain. Again, treatment is based on the patient's current level of visual function, the visual acuity necessary for specified tasks, the required working distance range, and the allowable flexibility in environmental adaptations. Of all the age groups in the partially sighted population, those of working age generally seem to be the most motivated to make use of residual vision and usually achieve greatest success. There is, for example, a higher incidence of success in this subgroup's acceptance of prismatic field expanders. Several patients of working age who underwent brain surgery which resulted in hemianopsia (loss of half of a field of vision) were able to successfully use prismatic field enhancers, whereas both younger and older patients have been less successful using this particular aid. Younger patients do not seem to understand the principles involved in the use of this aid and older persons, many of whom have lived with their hemianopsia for a long time, have often learned effective scanning techniques to compensate for the field loss.

Persons of working age generally require a wide variety of visual aids (usually a wider variety than those used by older or younger persons). For example, a 43-year-old patient was having difficulty with reading low contrast near-point print at 15-25 cm. However, his job required him to perform such a visual task. He was currently using stand magnifiers, a microscopic reading lens, and a bioptic telescope. He was rehabilitated for this reading task by means of a reading Rx to be used with his stand magnifiers, and by converting his bioptic telescope to a bioptic telemicroscope. The conversion is accomplished by placing a reading cap over the telescope's objective lens.

Another patient, a lawyer, suffered an impairment of her central acuity that was accompanied by reduced contrast sensitivity and increased glare sensivity. Her need for an aid that would allow her to read rapidly and comfortably for extended periods of time was met by the use of a CCTV system combined with spectacles incorporating the proper reading Rx. The CCTV system was especially appropriate because it permits image reversal and control of contrast and brightness--parameters that are not controllable with simple optical aids. For reading while away from her office or home with her better seeing eye, she received a prescription for an 8x aspheric microscope. In addition, she uses a third aid, a +16.00 D illuminated stand magnifier together with her distance refractive Rx when ambient illumination is not sufficient and she does not have access to her CCTV system.

Another young lawyer who had been told repeatedly that nothing could be done for her attained improved visual comfort with a tinted bifocal spectacle

Rx that allowed her both to see her clients' facial expressions and to tolerate normal levels of illumination. Her visual disorder results in a high degree of photophobia, in addition to acuities lowered to the legal blindness level. Low transmission NoIR sunglasses were also prescribed for outdoor use.

Conclusions and Projections

During the period May 1979 through March 1980 the Center has seen 560 new patients, 396 of whom (over 70 percent) were age 60 or older. Persons under age 60 are underrepresented in our patient population, in part because the ophthalmological community (our main source of referrals) serves a substantial proportion of older persons and also because AoA funds enabled us to direct special outreach efforts toward older adults. The larger-than-expected patient load has proved to be both a blessing and a problem. While the low vision service staff has found it gratifying to serve more of the people who need assistance, we are conscious of our responsibilities as a model Center. Sometimes the heavy patient load has interfered with the ability to collect the data necessary for evaluating activities and services. The aim of providing comprehensive individualized care sometimes interferes with the aim of completing an extensive standardized evaluation. Insofar as possible, the Center has attempted to implement both aims. Whenever we have been unable to achieve both ends, we have omitted data collection for the sake of patient services. Thus our dataset is less complete than we would desire for purposes of research and evaluation.

Relative to the low vision examinations performed at the Center, the experiences of the first two years attest that the optometric staff is providing full, patient-oriented assessments. This is reflected in the appreciation frequently expressed by patients about their examination and about Center facilities. Even in cases where visual aids have not worked as well as patients had hoped, it is common for them to preface their report of such outcomes with a statement of how thoroughly they know they have been tested. Low vision optometrists have tried, as carefully as possible, to explore patients' visual environments and have geared selection of visual aids to the solution of as many of the patients' visually related problems as appeared feasible and advisable. With many older patients, it has seemed wiser to work on one problem at a time--prescribing and training in the use of one aid for one specific task, allowing some time for adaptation to that aid, and then beginning work with a new aid and/or task. With school-age patients who have usually had some experience with visual aids in school, multiple aids can be prescribed at the same time; in these cases, careful attention is given to prescribing the best power for each task the students want or need to perform.

In all cases, both the pace of the low vision evaluation and the ordering of procedures is tailored to fit the psychological and physical states of the patients. Failure to adopt an individualized approach to examining partially sighted patients can result in making them feel alienated and inadequate. The Center's approach is designed to enhance patients' sense of self-worth and to help them understand that a great deal can be done to secure their full and independent participation in the individual and social activities they value. It must be underscored that providing comprehensive, patient-centered services for partially sighted persons is rarely possible in private practice because it is too costly. The types and scope of services we provide require subsidization. However, the goal--full human potential and access to the range of activities critical to quality of life--we believe more than offsets the costs of the services.

These conclusions should in no way be construed to mean that low vision optometrists or ophthalmologists in private practice do not provide good low vision care. While most of them provide excellent services, at the same time none of them are able to satisfy their patients' multiple concurrent needs for psychological assistance, orientation and mobility service, social development, and direction to other types of assistance that a center like the CPS can provide. Consequently we have been working toward providing supplementary services for patients who have received low vision treatment from private practitioners. This supplementary activity will more fully integrate the Center into the optometric community.

Whenever appropriate, low vision specialists have initiated aid training geared to individual patient needs and abilities, and have attempted to make suggestions about environmental modifications that can assist patients to cope with vision-related barriers with or without the use of visual aids. Personal environmental adjustment counselors have begun collecting follow-up data concerning whether patients are using prescribed aids successfully and, if not, why not. They also check and recommend environmental modifications. A long-term on-site follow-up is, we believe, unprecedented in low vision service. Nevertheless it is expected to be of special importance not only for assessing outcomes but for modifying treatments in cases where occurrence of problems would never have come to staff attention. Some of these problems include improper use of aids and gradual visual loss that is not perceived by the patient but that may benefit from a change in current aids. In addition, patients may learn about new activities at the Center in which they may be interested.

During the next project year, the Center expects to enroll about 600 new patients. As discussed below, referrals from the professional community, screenings at publicly accessible places, and exposure in the media will assure a continuing patient flow. Also during the past year the optometric staff and the community resource/outreach coordinator have, on several occasions, consulted with and provided information to groups of teachers for the visually handicapped as well as orientation and mobility instructors. Such activities have been well received; it is our plan to expand them during the coming year to include formal presentations and educational seminars, in the interests of both training and patient recruitment.

With respect to the low vision examination itself, procedures did not differ substantially this past year from those developed during the previous year of service delivery. However, advanced equipment enabled us to collect and make use of more refined information. For example, we have recently acquired a fundus camera to obtain photographic documentation for evaluating patients over an extended period of time. Such photodocumentation of unusual or even rare cases also has an obvious educational application for the optometric staff. In the coming year we expect to make more extensive and systematic use of photodocumentation for assessment of patients and for training low vision service providers.

Another significant addition was the recently received equipment for measuring visual evoked response (VER) and electrical signals from the area of the retina via an electroretinogram (ERG). We have begun to use this equipment on a limited basis to explore the possibility of reading electronic signatures obtained from partially sighted persons in order to make more objective assessments of their residual vision. Such an undertaking requires careful analysis of the coordinates of the 256 points that make up a VER/ERG signature and comparison of those points with similar data obtained from persons with similar ocular pathologies, as well as with data obtained from persons who have healthy eyes. The next project year will provide an opportunity to collect VER/ERG signatures for follow-up information and also for establishing an information base useful in research related to residual vision.

We would also like to evaluate quantitatively the effect of filters on the vision of patients with macular degeneration. Some patients report seeing better when they wear their sunglasses. We are trying to identify that group of patients who may benefit from this type of aid. We have some indication that it may be the group with macular dysfunction who have acuities at or below the level of legal blindness. This study utilizes neutral density filters, colored filters, a light box that provides illumination at three levels via a 20" circular window, and transparencies with parallel line-gratings that could run from 1 to 20mm.

Further, now that the low vision staff is able to make visual field measurements using a Fieldmaster, the problem of formulation of criteria for evaluating the functional effectiveness of a patient's remaining visual field can be pursued. This follows from the fact that the Fieldmaster records visual fields and produces a hard copy graphical display of those fields. The Center is currently devising a measurement system which will allow us to quantify this information. Our objective in the long run is to determine whether there is any meaningful relationship between ability to perform specific visual tasks, best corrected visual acuity, and the size, sensitivity, and geometry of the remaining visual fields. The Fieldmaster has been used to obtain approximations of the visual field for this functional evaluation. There is a margin of error due to poor fixational capabilities on the part of some patients and due to the high incidence of nystagmus, but the instrument does provide a quick, relatively reliable assessment of a person's visual fields (see Appendix C7).

The Center was recently designated a Night Vision Aid Certificated Center by the National Retinitis Pigmentosa (RP) Foundation. The International Telephone and Telegraph Corporation (ITT) presented the Center with a Night Vision Aid in late May 1980. The addition of the Night Vision Aid will enable the low vision specialists to determine which CPS retinitis pigmentosa patients might benefit from this relatively new device. During the coming year we plan to do a comparative study of this aid against a wide-angle illuminating device for night mobility.

Relative to training in the use of visual aids, more training responsibilities moved from the low vision specialists to the low vision assistants during the past year. This shift was made possible by the addition of a staff member to assume the clerical responsibilities associated with ordering and receiving visual aids that were previously borne by the low vision assistants. However, new training procedures have been added in eccentric viewing for both near and far distances. Training procedures for field enhancement have also been introduced. Both procedures will be refined and systematized during the coming year. We also plan to develop a general manual for training procedures useful to mobility instructors, VH teachers, and any others who may benefit from it.

Personal environmental adjustment couselors will continue to observe patients in their home, school, or work environments. In the coming year the PEAC program will be scrutinized carefully to determine whether it can be improved and to assess the effectiveness of its inputs to the rest of the project. We anticipate that we will need more PEAC time than was budgeted for year three because of greater numbers of patients becoming available for six-month follow-up visits.

A special PEAC project we would also like to undertake in the coming year involves placing a CCTV system in a senior center or retirement home where a number of partially sighted persons are present. Here PEACers could evaluate how often and for how long a visual aid system of this kind would be used in such environments, and by how many individuals.

Case conferences were begun during the past year to help integrate services. At these sessions staff members discuss patients' cases to determine if additional services or treatment are necessary. These staff members include the low vision specialists, low vision assistants, clinical psychologists, the community resource/outreach coordinator, the PEACers, and the Center director. Low vision practitioners outside the Center have been invited to attend and give feedback. In the coming year these conferences will be continued, and we will involve a greater number of non-CPS members of the low vision community. Hopefully this may help integrate available Center non-optometric services into the practices of private low vision practitioners and facilitate professional information exchange.

We have also begun formulating a policies and procedures manual relative to the duties of the low vision specialists, low vision assistants, and the low vision administrative assistant; we expect to complete it during the next funding period. This will, in essence, be a clinical procedures and office policy manual. It is our opinion that such a manual will facilitate more efficient delivery of low vision clinical services and will provide the basis for future guidelines in the establishment of low vision services elsewhere. We hope to produce a schematic for highly efficient and very comprehensive evaluation and training of partially sighted patients. In addition, during the coming year we also plan to write home instruction and training sheets for the use of specific aids. These will summarize the training received at the Center and serve as a written reminder for patients. They will include information about handling the aid, what tasks it is to be used for, and how to care for it.

Finally, we have found that a disproportionate amount of time is spent by members of the Center staff in preparing separate and distinct reports for our funding agencies. This time could be better spent, we believe, in evaluation activities and patient care. During the coming year we will explore with relevant funding agencies the possibility of consolidating some of our reporting in a way that will satisfy the needs of each funding source and will reduce the total amount of time spent in such activities.

B. PSYCHOLOGICAL SERVICES

The Psychological Services program is designed to provide assessments and treatment for psychological disorders resulting from the loss of vision, and to organize socializing experiences for partially sighted persons to augment their abilities to cope with low vision. To reach these objectives, several services have been developed, including assessment of patients for psychological problems, individual psychotherapy, family therapy, group therapy, special group meetings for working-age adults and for parents of partially sighted children, and peer counseling. The goals of the program are to maximize the abilities of partially sighted persons to live independently and to their full potential through resolution of psychological problems that affect their utilization of reduced vision and their adaptation in other areas of their lives.

The psychology staff consists of one licensed clinical psychologist (Ph.D.) with specializations in the fields of rehabilitation and gerontology, and two psychology assistants (graduate students with M.A. degrees completing predoctoral internships). Each staff member provides one day a week of time to clinical services. The staff is responsible for conducting initial evaluations and doing individual and family treatment when appropriate. In addition, one psychology assistant is coordinating and co-leading the working-age group with the senior psychologist while the other has co-led the weekly therapy group. The community resource/outreach coordinator and the senior psychologist coordinate the parents' meetings.

Other activities of the psychology staff have been to provide consultations to other personnel of the Center for the Partially Sighted concerning patient relationships, and to other social service agencies so that they may better identify and meet the needs of partially sighted persons whom they serve.

With the addition of the two psychology assistants to the psychology staff, it has been possible to arrange psychological screenings for a larger percentage of Center patients and to ensure that screenings and counseling are in most instances available when they are appropriate. Responsibility for the groups has been shared in the past project year, with the result being more individual attention to group members. The psychological screening form is shown in Appendix E.

One major change in staff responsibility in the past year has been the provision of around-the-clock services. One person on the psychology staff is always on call, connected to the hospital switchboard with a beeper. This program was developed because an occasional patient has suicidal thoughts or other emergencies that may warrant after hours attention.

Supervision of the psychology staff and their services is the responsibility of the senior psychologist, who holds regular staff meetings for discussion of both clinical and administrative matters. The senior psychologist is also available to other Center staff when problems arise about which they wish a consultation.

Each psychologist sees from 3 to 6 patients per day, depending on scheduling. The majority of contacts are psychological screenings. Typically, the psychologist carries only one or two ongoing patients for psychotherapy. About 15 percent of staff time is spent on administrative responsibilities, especially report writing. Another 10 percent is in consultation with other staff, providing feedback and suggestions for patient care based on the psychological screenings. This is an area that has been given increased attention over the year, but still warrants further augmenting.

Psychological Evaluations. Psychological evaluations are arranged either at the request of patients, at the request of optometrists, or in the context of case conferences on patients, when it is determined that a psychological evaluation is desirable. The majority of screenings are arranged through referrals from other staff; most patients do not initially realize there is a connection between their visual and psychological functioning. One important goal of the screenings is to identify how patients' psychological adaptations to visual loss contribute to the ability to maximize their remaining capacity for vision and performance in other areas.

The psychological screening consists of an interview with patients and with any involved family members who have accompanied patients to the appointment, such as spouses, children of aged patients, and parents of young patients. The goal of the screening is to determine the person's adaptation to the visual loss, motivation for treatment and for the use of visual aids, environmental influences that impede or facilitate adaptation, and any thoughts, feelings, or behaviors that may also interfere with optimal functioning and use of rehabilitative services. Among the specific elements in the evaluation are the extent and severity of depression, an evaluation of risk of suicide, previous psychiatric history and treatment, attitudes toward loss of vision and the use of visual aids, motivation and incentives for treatment and the use of visual aids, potentially pleasant or reinforcing activities that the patient may undertake, the family and social support network, and other stresses or losses that may currently be affecting functioning. The screening interview usually takes 45 minutes.

Findings from the psychological screening that are relevant to patient care are presented to other staff members working with that individual, both through notes written on the patient chart, case conferences, and meetings with particular staff to discuss a given patient. If the psychologist conducting the screening feels that counseling is appropriate in conjunction with other Center services, a recommendation will be made directly to the patient by the psychologist. It has been the judgment of the psychology staff that approximately 25 percent of patients screened would benefit from a program of brief psychotherapy. Because of the distance that many patients have to travel to visit the Center, however, several who would otherwise be appropriate candidates for counseling have difficulties coming for weekly appointments. On occasion it is possible to refer them to a mental health agency in their communities for services, but in most instances it is not possible to provide the needed counseling.

In addition to an increase in the number of screenings conducted during the past year, there have been changes in the type of information sought in the screening interview. As we have gained experience with partially sighted persons, it has been possible to clarify and make more specific inquiries about the need for services. In particular, it has been possible to make differentiations between exaggerated statements associated with depression and accurate assessments of the patient's condition. Most persons who have had recent losses in vision feel hopeless to some degree. This hopelessness, which contributes to other feelings of depression, is often reflected in statements such as, "I can't see," or judgments that patients make about themselves such as,"I can't ever be happy if I can't drive," or "My life is over if I cannot read." While a naive fully sighted person might view these statements as realistic assessments, patients who have made the best adjustments have been observed to modify these statements over time and to make more balanced evaluations of themselves. Instead of saying "I can't see," for example, they learn to think of themselves as partially sighted, that is, as having difficulties under some circumstances, but not in all situations.

These overgeneralizations are similiar to the types of expression described by Beck (1976)[*] and others as manifested by depressed persons (see Zarit, 1980, for a discussion of overgeneralizations in the elderly).[**] The consequences of making an overgeneralization are to feel hopeless and to make no effort at rehabilitation. By identifying and working to change these depressive statements, it is possible to reduce feelings of depression and to increase patients' motivation for rehabilitation efforts such as the use of visual aids. One recent patient with macular degeneration even went so far as to say that she could see better since she stopped describing her condition as "I can't see" and began to think of herself as partially sighted.

Individual and Family Counseling. The goals of individual and family counseling are to help persons make the behavioral and emotional adjustments necessary for coping adequately with visual loss, and to attend specifically to problems that impair maximum functioning, such as depression, anxiety, suicidal thoughts, and low motivation for rehabilitation efforts. Because of the transportation difficulties noted earlier, there are usually only three or four ongoing counseling cases in a given week. Counseling may be relatively brief (2 to 5 sessions) when the major focus is on adjustment reactions and there are no other persistent behavioral or emotional problems. A person who is severely depressed or has other persistent problems requires longer treatment (6 to 20 sessions).

Counseling methods used by the psychology staff are problem oriented, using behavioral and cognitive interventions (see Rimm and Masters, 1979;[***]

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[*] Beck, A., Cognitive Therapy and the Emotional Disorders, New York, International Universities Press, 1976.

[**] Zarit, S. H., Aging and Mental Disorders: Psychological Approaches to Assessment and Treatment, New York, The Free Press, 1980.

[***] Rimm, D.C. and J.C. Masters, Behavior Therapy: Techniques and Empirical Findings, Second edition, New York, Academic Press, 1979.

Mahoney, 1974;[*] Meichenbaum, 1977;[**] Goldfried and Davison, 1976;[***] Zarit, 1980,[****] for summaries of therapeutic techniques). Rather than attributing adjustment problems to hypothesized childhood origins or current psychodynamic interrelationships, the psychologist identifies environmental cues and reinforcements associated with dysfunctional behaviors and emotions. These behavioral analyses are then used to generate strategies for making different responses or changing the sequences of behaviors or thoughts that lead to depressed or anxious feelings.

Because of the impact of visual loss on family members, spouses or adult children living with older patients are sometimes included in the counseling. The family sessions clear up misunderstandings between persons about the types of difficulty the patient experiences, expectations for improvement, and the best strategies for helping and supporting one another. Parents will also be seen for family counseling around issues of how to treat a child with an impairment, concerns about school or career, or managing the child's behavior problems.

The following examples will illustrate brief and more long-term counseling procedures. The first case is a 59-year-old woman with a 30-year history of a degenerative eye disorder (uveitis). The referring optometrist reported she had been anxious and tearful during the examination. This woman (Ms. S.) appeared anxious and became tearful as she talked about her situation. Her main concerns were how she would be able to take care of herself in the future if her vision worsens, and also what she described as claustrophobia. Upon questioning, the claustrophobia consisted of nightmares of being placed in an enclosed space, like a cellar, and which caused her to awaken crying and upset. She said the experience of being enclosed in a small cellar dated from childhood, but the onset of the nightmares was two months earlier when her physician told her her vision had deteriorated and that she needed to have a cataract removed. The counselor "relabeled" the sympton as a natural reaction to her worsening vision, and asked Ms. S. to note the frequency of the nightmares during the next week. A counseling contract was also agreed upon, focusing on her fears about losing her eyesight and making realistic plans for taking care of herself if her vision worsens. In two subsequent sessions she reported diminishing of nightmares and improved ability to cope with frustrations she encountered as the result of her low vision. Her mood improved and her anxiety decreased. Treatment was terminated after three sessions, with Ms. S. planning to attend the patient group meetings after her cataract surgery.

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[*] Mahoney, M. J., Cognition and Behavior Modification, Cambridge, Mass. Ballinger, 1974.

[**] Meichenbaum, D., Cognitive Behavior Modification, New York, Plenum Press, 1977.

[***] Goldfried, M. R. and G. C. Davison, Clinical Behavior Therapy, New York, Holt, Rinehart and Winston, 1976.

[****] Zarit, S. H., Aging and Mental Disorders: Psychological Approaches to Assessment and Treatment, New York, The Free Press, 1980.

As an example of still longer counseling, a 33-year-old woman with diabetic retinopathy was seen because of severe depressed feelings, including suicidal thoughts. At the start of treatment, the psychologist judged her suicidal risk to be high, and she reported thinking about taking her life several times a day. Ms. G. felt she could never lead a happy life again because of her visual loss. In particular, she said that not driving made it impossible for her to lead the kind of life she wanted, and that having a visual loss made it unlikely that men would be interested in her. The counseling followed patterns of working with depressed persons suggested by Beck (1976),[*] identifying the exaggerated statements she made (e.g., "I can't ever be happy again") that were antecedents to feelings of depression. She was gradually able to substitute other thoughts for the exaggerations. As an example, she came in one week quite depressed and talking about suicide again, after having been improving for several weeks. When she began talking she could not report any reason for feeling so low, except that she thought she could never be happy again. Gradually it became apparent that she was depressed over the fight she had had with her boyfriend over the weekend. Rather than being upset over that, however, she interpreted her depression as due to her visual loss. By working with her to understand she was distressed over her boyfriend and not over her partial sight, the counselor enabled her to get over the depressed feeling and to recognize that many disappointments had nothing to do with vision. That gave her hope to continue to try to form new relationships. After four months of counseling she was no longer depressed or suicidal, and used the sessions to plan making improvements in her life, such as her future career direction. She had also learned the skills to identify the exaggerated thoughts that preceded depressive feelings, and to counter those thoughts with adaptive self-statements.

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[*] Beck, A., Cognitive Therapy and the Emotional Disorders, New York, International Universities Press, 1976.

The major change in individual therapy during the past year has been the increased clarity that the psychologists have attained in identifying patient problems and goals. The psychology staff has gained knowledge at this point about the consequences of various eye disorders, especially the behavioral implications. This has made it possible to distinguish more clearly what are appropriate or exaggerated expectations. Among exaggerated expectations are both those that are unrealistically optimistic ("I want to drive again") and overly pessimistic attitudes ("No one will ever love me if my vision is poor"). By focusing directly on these thoughts, the psychologists are able to have an impact on the process of adjustment.

As an example of how the psychologists have been able to learn the limits and potential of partially sighted persons, one patient with low vision (including field restrictions) due to cataracts and glaucoma is now engaging in a highly visual activity--painting. When first seen by the staff one year ago, she was virtually a recluse, unable to travel by bus or to cross streets. With a combination of counseling and orientation and mobility training, she gained confidence to get around on her own. She then attended patients' group meetings, where she used the time to ask for suggestions about possible activities for her, to take the place of the things that she had to give up. Receiving talking books from the Library of Congress was a big help, but she was looking for something more. She tried a few classes, but those did not work out. Finally she decided she wanted to take a painting class, something she always had an interest in but had never had time to pursue. At a senior center, the instructor of a class told her that her vision was not good enough and would not admit her to class. Although upset, she enrolled in a class at another senior center and later in a community college. Despite her severe visual loss, she has a natural talent for painting and now, in addition to continuing the classes, spends two or three hours most days painting. She receives a great deal of satisfaction from her work. Not just a time filler, this visual activity has given her life a new sense of direction.

Group Counseling. Three types of group counseling have been held during the past year. There is a weekly patient group that meets every Thursday at 10:30 A.M. This group is theoretically open to all patients, but because of the hour, is usually comprised of retired persons. Meetings have been held every week for the past year. The second group is called the working-age group, and is designed for persons concerned about maintaining a work role despite their visual loss. This group has met once a month during the past year. Ages of participants have ranged between 18 and 65. The third is a bi-monthly meeting for parents which has met five times during the past year.

The weekly patient group usually has an open format, wherein it is possible to discuss anything that concerns participants about their visual loss and adaptation. Topics have included dealing with depression, being unrealistically pessimistic, how to inform fully sighted people about help one needs and does not need, how to get involved in satisfying activities, dealing with bus drivers, store clerks, and other individuals who sometimes can be unpleasant to the partially sighted person who needs assistance, as well as providing answers to questions about visual functioning. The group is led by the senior psychologist and usually has a partially sighted peer counselor and the Center director in attendance.

The working-age group sometimes has an open format and sometimes has a specific topic. Topics have centered around getting and keeping a job and personal relationships. A major problem in this group has been the lack of continuity from one session to the next. Because the majority of people attending are employed, it is not feasible to hold weekly meetings. Monthly meetings, however, leave a large gap between sessions that is sometimes difficult to overcome. As a result, there is not as much continuity from one session to the next as desirable. Recent meetings have been more productive, with participants feeling freer to express concerns that have been troubling them. This group is co-led by the senior psychologist and an assistant.

The parent meetings have included both specific topics and open sessions. The groups have served as a meeting place for parents to learn from one another about the best ways of handling children with visual problems. Specific topics of discussion have been relationships with siblings, disciplining children with visual impairments, career possibilities, and school problems. A special careers night was held for both parents and children, with discussions led by four partially sighted adults about their own education and careers. This group is co-led by the senior psychologist and the resource/outreach coordinator.

Since last year the groups still face similar problems, especially that of transportation. Even for the parents' meeting, where most parents can drive, the distances they must come are so great they cannot make the evening meetings. The working-age group has recently been moved from evenings to Saturday mornings, with the result that attendance has increased. Many potential persons who could attend, however, live too far from the Center to travel conveniently by bus even during daytime. As it is, some individuals who attend both the working group and weekly patients' group travel over one hour each way.

These difficulties notwithstanding, the groups have had more direction during the past year. During the first year participants often diverted the discussions with talk about physical symptoms of their eye disorders. In the past year there has been more attention to adaptation to disorders, and to the psychological and social aspects of adjustment.

Peer Counseling. Peer counseling continues to be one of the most successful aspects of the psychological services. During the first year of the program, a group of eight individuals were trained in listening skills and other counseling techniques. They were then employed to greet new patients and to be available to talk to patients about their eye disorders and how they have coped with them. Patients are typically surprised to meet someone else who is also partially sighted and are often pleased to have the chance to ask questions, both about services at the Center and more generally about how the volunteer manages with the various problems that affect partially sighted persons such as reading, transporation, and engaging in activities.

The original group of eight peer counselors were selected from patients at the Center (and in two instances were daughters of patients). During the first year, there was some attrition as the volunteers became involved in other activities. As a result, a new group of six peer counselors, all of whom are partially sighted, have just been trained.

The training process has been refined over the past year. Initially listening skills were emphasized. With the increased experience of the peer counselors, it is now possible to train new groups to anticipate the specific questions they are most likely to receive. The new training therefore emphasized, in addition to listening skills, how to respond to the various kinds of advice they are asked to give, ranging from what optometric services help to how to manage daily problems. In general the peer counselors have been trained to respond not by giving advice, but by talking about their own experiences. If peer counselors are asked about a specific aid they are using, for example, they can say it helps them, but that everyone's visual problem is different.

The peer counseling program is popular with patients as well as with the volunteers themselves. The peers provide patients with role models of persons who have successfully adapted to visual loss. In the early stages of making an adaptation to visual loss, it is important to learn that people can function and have normal lives despite their loss, and the peers serve this role. It is also possible for patients to talk to peers in ways that they cannot talk to other staff. No matter how much openness the staff encourages, it is still easier for some patients to raise important issues with a peer whom they view as like them or in the same boat.

The peer counselors each volunteer to spend a half day a week at the Center in that capacity. Peer counselors have also been involved in both the weekly group and working-age group meetings. In addition, there is a monthly training and supervision meeting led by the senior psychologist.

Staff Consultation. Staff consultations have increased during the past year. This has occurred both through scheduling more one-to-one conferences between a psychologist and other staff members, and through the formal patient case reviews that have been instituted. The increase has also been the result of more clearly defined expectations about what types of patients should have psychological screenings and can benefit from treatment.

The major function of the staff consultations is to provide information to the optometric staff about psychological issues affecting the performance of individual patients. At the same time the consultations have enabled the psychological staff to become more knowledgeable about eye disorders and their treatment. There is now a greater understanding about the purpose of psychological interventions among other staff, although sustained efforts in this area over the next year are desirable.

Conclusions

During the past year the psychological services have maintained existing programs, while increasing the level and quality of activity. The changes for each specific part of the psychology program are summarized below.

1. Psychological Evaluations: The level of evaluations has increased so that virtually all persons referred by other staff can be seen for psychological screenings. The process of making referrals and providing feedback to referring staff has been improved. More persons who could potentially benefit from psychological services can now be identified, and other staff have a better understanding of the contribution of psychological interventions to the overall rehabilitation program.

A major development has been in the refinement of evaluation procedures. A standard behaviorally-oriented assessment has now been modified, as described earlier, in order to identify the special problems experienced by partially sighted persons. These procedures have potentially widespread applications for other programs serving the partially sighted, as there are no guidelines in the literature for psychological evaluations.

2. Individual and Family Counseling. The extent and quality of counseling has increased during the past year. As noted, however, transportation remains a considerable barrier for many people who might otherwise benefit from counseling. Family counseling has still not increased to a level that would reach those individuals who are appropriate for it. Further consultations with staff in this area may help identify patients for whom involvement of other family members would result in gains. Earlier identification of potential cases would involve family members at a point early in their contacts at the Center when motivation for treatment is higher.

The quality of interventions has also improved. As with the evaluations, a standard behaviorally-oriented approach has been modified to respond to the unique aspects of problems expressed by partially sighted persons.

3. Group Counseling. The three group counseling programs have been maintained and expanded somewhat during the past year. Transportation continues to be a problem for group meetings, but attendance has generally increased, especially for the weekly patient meetings.

4. Peer Counseling. The peer counseling program has been maintained, despite some turnover in the initial group of volunteers. Two new classes of volunteers have been integrated into the program. The training has been developed to give a clearer focus to the interactions between volunteers and patients.

Rather than stressing general communication skills, there has been more emphasis on specific responses peers can give when patients raise various concerns. This more concrete approach gives the peer counselors confidence in conversing with new patients.

5. Consultation. Consultations with staff of other services have increased steadily during the past year. Increased coordination of treatment has occurred as the result of regular patient review meetings and conferences arranged to discuss particular patients. In general, the optometric staff has a better understanding of the uses of psychological interventions, and the psychology staff has gained more knowledge of the effects of various visual disorders.

Projections for Upcoming Year. The goal for the next year is to continue the service program in the same format, with continued upgrading of quality and of staff training, both psychology and non-psychology personnel. Some specific areas of development are described below.

1. It is planned to continue to make improvements in consultation and training of staff.

2. In order to reach patients living in outlying areas, former patients from those regions will be trained as peer counselors. Patients who could benefit from counseling could then be contacted by phone, and occasionally in person, by someone residing nearby. A trial group will be formed either in the San Gabriel or Simi Valley areas this summer to determine the feasibility of this plan, with groups to be developed in other regions if it is successful.

3. A program of consultation and training for persons in mental health and gerontology programs will be developed. This training will enable other service providers to identify individuals who might benefit from low vision

rehabilitative services, as well as to provide skills so that partially sighted persons could be referred to agencies nearer their homes for counseling or other social programs.

4. Plans will be made for developing a procedural guide of the assessment, treatment, and peer counseling modalities. This guide would make a unique contribution, since there is virtually no body of knowledge on psychological interventions with partially sighted persons. This guide would be aimed at mental health professionals and at other professionals involved in low vision programs.

C. ORIENTATION AND MOBILITY SERVICES

In its comprehensive approach to low vision treatment, the Center offers its patients orientation and mobility services. The orientation and mobility (O&M) specialist provides information and instruction to patients in the use of residual vision, optical aids, and where necessary, compensatory nonvisual techniques for purposes that range from moving about comfortably in the home to traveling independently on buses, in heavily trafficked areas, and in unfamiliar areas. (O&M forms are referred to in Appendix D.)

Between June 1979 and April 1980 the O&M specialist received 54 referrals. Referrals are made by the low vision specialists, psychological counselors, and the PEACers. Previously, referrals came only from the low vision specialists. Most referrals continue to consist of patients who express fear or inability to cross streets, locate drop-offs (steps, curbs, and the like), and use public transportation. Patients with field restrictions are most likely to make use of O&M services. This past year the most common etiologies of patients referred for O&M were senile macular degeneration, glaucoma, retinitis pigmentosa, and diabetic retinopathy. It is noteworthy that referrals for patients with diabetic retinopathy have increased to account for over 10 percent of the total, whereas none with that diagnosis were seen for O&M the previous year. All referrals are made either verbally or by a note to the O&M specialist's file.

Of the 54 referrals, 34 were in the age group of 60 years and older. Among the 34 older patients, 10 have received instruction, 5 will receive instruction at a later date, 12 remain to be contacted, and 7 either did not want or could not benefit from such services in the opinion of the instructor. In all cases where instruction was given, a prior evaluation was conducted. Evaluations were based on patient task needs and, when possible, were conducted at the task need location. Occasionally evaluations were conducted at the Center, but with the understanding that instruction, if needed, would be at the task need location. More often than not, this location would be in the home or neighborhood of the patient, but could include work sites as well. Those who received instruction did so over a broader spectrum than in the previous period. Typically, there were patients who seriously needed help on street crossings and with use of buses, but as a group the patients referred for O&M this year tended more toward functional blindness than previously. Consequently, three required limited use of a long cane, and these three plus two others required training in use of a sighted guide for situations where independent travel was impractical. Two of those using the long cane are now traveling independently by bus in limited situations. In this older group, individuals receiving instruction tended to have fairly limited needs and frequently depended on others to fulfill their major travel requirements. One bright exception to this general rule was a 75-year-old woman who needed limited use of a long cane, yet is able to live entirely independently. She has been an inspiration to everyone at the Center.

The five referrals who will receive instruction at a later date are persons who are being delayed by various health problems or who will only be seen at the Center. The most common health complaint causing delay is arthritis or injury due to a recent fall (which gave rise to the need for O&M instruction). Two persons prefer to receive O&M at the Center because they do not wish to be seen as persons with visual needs in their own living environments. Typically, these two persons frequently cancel appointments. Those who refused or declined services had either previously received instruction or felt it was not really necessary. Some, in the opinion of the instructor, did not or could not benefit due to unnecessary referrals, poor motivation and attitude, or severe limitation in another health area. Those who decline services but are believed to need them are recontacted at six-month intervals. One such patient refused services for nine months, but is now very happily receiving needed instruction. Unnecessary referrals occur occasionally. In order to assure adequate services to our patients, we would perfer to err in this direction to make sure that necessary referrals are not being overlooked.

In the working-age group (patients from age 18 to 59 years), 19 referrals were made. Of the 19 referrals 7 received O&M services, 4 are scheduled to receive services, 5 remain to be contacted, 2 were unable to receive services, and 1 had previously received services elsewhere. Of the 7 who received services, approximately half suffered from severe visual loss, 2 as a result of advanced diabetic retinopathy. Services included sighted guide, route orientation, long cane instruction, and personal motivation. While the latter is included in all cases, in some it is the major aspect of instruction. Services to these patients are often integrated with psychological services provided by the Center. O&M services in one instance consisted only of an evaluation resulting in recommended instruction which the patient rejected. In a later case conference, it was determined this patient was rejecting all recommendations from Center staff and the problem could be approached generically. The remainder of those who received services benefited in that they are either now traveling independently or have more positive feelings about their previous abilities. Three are presently employed and three are seeking employment.

Only one referral in the school-age group was given services. Most patients in this age group are referred to their local school districts where services are provided rather than to the O&M specialist at the Center. The one referred case was evaluated to establish whether O&M needs existed and had previously been neglected in the school program. As a result of the Center's input to the parents and school district, these O&M services were eventually provided.

In the past year, as noted earlier, those receiving services have had less residual vision than those seen in the previous year. As a result, the average time spent per patient has increased from three one-hour visits to approximately four or five one-hour visits. Those who rely on remaining vision or at least view themselves as still vision oriented continue to have high rates of success. Those who see themselves as "blind" require considerable motivational support to achieve success. Aside from other health problems associated with age, there was little difference by age in terms of motivation and success. While older patients often had lowered expectations as a result of less demanding needs, their success in meeting modest goals was still very encouraging.

Overall, it is encouraging to note the increase this year in numbers of referrals and number receiving the benefits of instruction. While this increase is due in part to greater community awareness of the Center, it is also due to new referrals from and greater communication with other Center components, i.e., psychology, PEAC, and community outreach. Feedback on referrals is provided either verbally or by note to the appropriate staff file. There also have been referrals by the O&M specialist to other Center staff and even into the community. Such referrals have included psychology staff, community outreach, California State Department of Vocational Rehabilitation, and the Veterans Administration.

The O&M services have expanded into new ventures this past year. As a result of an Advisory Committee comment, an O&M handout (see Appendix D3) was developed that gives travel suggestions for the partially sighted. Not only does this handout aid in some very basic areas, but it also alerts patients to possible needs they may have overlooked or avoided. Also, a school eye report form was developed for the Center to use for returning information to school districts following a student visual examination or screening. (See Appendix C5, Confidential Eye Report for Children with Visual Problems.) This form satisfies California state education needs and is also a necessary reference for the teacher and/or school nurse. In March a workshop was presented by the O&M specialist, one of the low vision specialists, and a local classroom teacher of the visually impaired at the annual conference of the California Transcribers and Educators of the Visually Handicapped. The topic was use of low vision aids in the classroom; the workshop was well attended and very successful.

There were few problems in O&M services this year other than with lack of time to meet the increased caseload. This situation will be alleviated with better planning and organization. A new form for easier record keeping is being developed, and more time is being made available to the Center by the O&M specialist. The caseload is expected to increase further to around 65 referrals. In terms of success of delivery, expectations are being met. It is hoped that O&M work can be undertaken in areas involving more sophisticated aids such as Fresnel prisms and possibly the Nightscope in the coming year. These aids are still quite new, but are showing increased success in other parts of the country. The area that still presents the greatest challenge for O&M is motivating and encouraging the older adult who feels defeated by limited visual abilitites. The Center's inclusion of psychological counseling is a great step in this direction. Travel needs of the partially sighted are generally well met once patients understand and accept their visual condition.

D. OUTREACH, RESOURCE REFERRALS, AND INFORMATION DISSEMINATION

The Center for the Partially Sighted is continuing in its efforts toward a productive working relationship with community agencies and professionals who are in contact with the partially sighted, and is making substantial headway toward informing the general public as well as visually impaired individuals about the partially sighted population. The goals of outreach, resource referral, and information dissemination activities are to publicize Center services so that the partially sighted are aware of their availability, to gather and distribute data about the many resources available to the partially sighted, and to disseminate information that will educate people about the nature, needs, and capabilities of partially sighted persons of all ages. This component of the Center has also been working on ensuring long-range support of the Center for the Partially Sighted and encouraging support of projects that will benefit the partially sighted here and elsewhere.

To meet these goals, the Center employs one full-time community resource/outreach coordinator who spends about 30 percent of time on specific patients' resource referrals and 20 percent establishing and maintaining contacts with agencies for outreach and data gathering purposes; in addition, approximately 20 percent of the resource/outreach coordinator's time is directed toward special issues (e.g., architectural barriers to the partially sighted or legislative action to obtain third-party payments for low vision services and visual aids) and another 20 percent toward fundraising activities. The Center director devotes about three-fourths of his time to the goals of this component, the majority of which is spent in fundraising, public relations, information dissemination, and advocacy and public issues relevant to the visually impaired. The Center's publications coordinator also spends on average 60 percent of time on these efforts. Recently the Center's Advisory Board has become involved in attempts to generate future financial support for CPS, and a voluntary speaker's bureau is being planned to contact and inform service organizations that might wish to hear about and support Center services and assist patients who cannot afford the cost of prescribed low vision aids. Finally, the Center also has employed a public relations firm for a three-month period to organize a broad-based public information and interest campaign.

To support the purposes cited above, Center staff members have been in contact with members of the visual care community; the California Department of Rehabilitation (CDR) and other vocational counseling and placement agencies; administrators and teachers of the visually impaired; many kinds of social service agencies; professionals who work with special population groups that overlap the partially sighted, as well as members of such special population groups; universities and other training facilities for professionals who will serve the visually impaired (e.g., ophthalmologists, optometrists, teachers of the visually handicapped, and rehabilitation therapists); legislators and other government officials; representatives of different media; and organizations and individuals potentially able to offer immediate and long-range support to the Center and its patients. In addition, the Center has developed substantial national and local mailing lists for distribution of information concerning the partially sighted. Consequently these organizations are aware of both the Center and the partially sighted population, and the Center has developed a substantial base of information about resources available locally and nationally. As a result of these and other contacts, approximately 560 new patients sought its services during the period from May 1979 through March 1980. Approximately 20 patients per month took advantage of community resource referrals.

Outreach

Outreach has as its aim to contact, either directly or via the organizations that serve them, as many individuals as possible who are likely to need the comprehensive services offered by the Center. The ophthalmological community remains the single greatest source of CPS referrals in the greater Los Angeles area, and the Center has continued to direct outreach efforts to local ophthalmologists. (It is important to note that if the Center did not exist, many of the patients referred to us by ophthalmologists would have been directed to an agency for the blind, and others would have received no referrals at all.) In the fall of 1979 a letter went out to 700 ophthalmologists in the area in order to reacquaint them with the comprehensive services offered by the Center and to inform them about the sliding-scale fee schedule that would take effect in January 1980. In January 1980 the Center arranged a meeting with leading ophthalmologists to explain the necessity of this fee schedule. Ophthalmologists agreed with the Center's view about the urgency of working for reformation of Medicare regulations relative to low vision examinations, low vision aids, and training in the use of aids, so that needy older Americans are no longer prevented from making effective use of their remaining eyesight.

A letter similar to that sent to the local ophthalmologists was sent to 1100 optometrists in Los Angeles County in the fall of 1979, urging those who were not in low vision practice themselves to refer their partially sighted patients to this Center for low vision services. In June of 1979 the Center took an important step toward improving its relationship with the optometric community in Los Angeles by initiating a series of meetings with leading low vision optometrists from the area. The Center director was concerned about possible misunderstanding on the part of optometrists regarding the objectives and outreach activities of the Center for the Partially Sighted. During this meeting he emphasized that to serve the 70,000 partially sighted people in the greater Los Angeles area, the efforts of both private practice optometrists and the Center are needed, and that cooperation between the Center and the private practitioner was in the best interest of partially sighted persons. He stressed that Center staff were eager to supplement and not supplant the efforts of optometrists in low vision practice by offering their patients non-optometric services (e.g., psychological counseling, orientation and mobility instruction, referral to valuable community resources). It should be noted that all patients are urged to continue seeing their private ophthalmologists or optometrists unless otherwise advised by these professionals. Further, in February 1980 the Center director invited or reinvited three distinguished members of the low vision optometric community to participate in the Center's service delivery and research activities, and all three accepted this offer.

Other agencies in the vision community have also been contacted as part of the Center's outreach program. For example, another visit was made to the Braille Institute, and several of that agency's staff members were given a tour of the Center; these activities were arranged in order to acquaint the Braille Institute with the quality and range of services offered here and to impress it with the need for all partially sighted persons, whether legally blind or not, to receive thorough low vision examinations that enable them to use all of their remaining eyesight. Similar visits were arranged for the Vocational Independence Program at the Foundation for the Junior Blind and the Blind Children's Center in Los Angeles.

The Center's relationship with the California Department of Rehabilitation (CDR) remains excellent. During the fall of 1979 senior members of CDR visited the Center and were so favorably impressed that a meeting was arranged between the Center director and the Director of CDR. At that meeting the Center director explained who the partially sighted are, how they differ from the functionally blind and from the fully sighted, why they require services specially designed to meet their needs, and how the CPS is providing those services. The director of CDR fully agreed with the need for these special services and was convinced that the Center was doing a high quality job of delivering them. He pledged his support to the Center.

Throughout the year the Center has also continued to welcome visits from staff members of various district and branch offices of the CDR. In February 1980 an important meeting was held with the staff of the Inglewood District Office, which is the CDR office in closest proximity to the Center. This meeting was scheduled in order to discuss questions and problems that could potentially impede either Center assistance to its clients or CDR's ability to help Center patients. For example, in the past, problems have arisen when one of our low vision optometrists has judged it not advisable to prescribe a visual aid that previously was suggested to a patient by a rehabilitation counselor. CDR staff members were also uncertain about whom they should and should not refer to the Center, while Center staff members were equally uncertain about how best to refer to CDR older adults who need financial assistance with visual aids. All of these concerns were discussed openly, and an understanding was reached by the end of the meeting.

In addition, the Center has provided outreach information to other agencies offering vocational counseling and placement to the visually impaired. Staff members have been in contact with and offered tours to personnel from the Santa Monica branch of the State Employment Office, Wadsworth Veterans Administration Hospital, the Westside Center for Independent Living, the vocational component of the Mayor's Office for the Handicapped of the City of Los Angeles, Women's/Nontraditional Employment Services, the UCLA Special Personnel Program, the Jewish Vocational Service, and the Second Start Program for Senior Adults, as well as to other persons concerned with vocational counseling and placement. It is hoped that these professionals will refer partially sighted persons seeking employment to the Center for visual assistance and for support (e.g., via the Center's working-age group) of their vocational efforts.

Older adults have remained an important focus of Center outreach activities. In the fall of 1979 phone calls were made and letters were sent to each area councilperson's senior specialist in order to be sure these individuals were acquainted with Center services and to inform them about the sliding-scale fee schedule, making clear how little an older adult on a limited income would be obliged to pay for services. Similar contact was made with representatives of each of the multipurpose senior centers in the greater Los Angeles area, as well as various other programs such as the Andrus Gerontology Center at the University of Southern California, the Santa Monica Peer Counseling for Elderly Persons Program (PEP), an ombudsman program called FARES, the Fairfax Information and Referral Service Team (F.I.R.S.T.), Older Persons Information Counseling Associates (OPICA), and several retirement communities and nursing homes. The Center has continued its policy of arranging screenings at strategically located senior centers, at the approximate rate of one screening every other month. Recently CPS has sent staff to give lectures at the senior centers during the month before the intended screenings so that the older adults and staff would be better informed about low vision and the screening would be more effective. The Center has arranged for similar lectures and screenings at some of the larger retirement communities in the Los Angeles area.

Data collected for last year's report indicated that the Center was seeing a disproportionately small number of minority and low-income patients, so this year's outreach efforts intended to remedy the imbalance. Thus, two out of the four senior center screenings conducted before March 1980 were located at sites frequented primarily by minority and low-income persons, and a similar screening is being planned for a third minority location. The Center has also worked closely with and received many referrals from at least one ophthalmologist serving primarily Spanish-speaking people. To reach yet another low-income population, the multiply handicapped, the Center arranged a screening for clients of the Center for Living Independence for the Multihandicapped Blind (C.L.I.M.B.), and provided services to seven of their residents as a result of this outreach activity.

Schools have also continued to be a prime target of Center outreach efforts. In November of 1979 a mailing was sent to all teachers and administrators involved with visually impaired children in the public schools in the greater Los Angeles area. Because Center staff understood that teachers could not legally refer students to services at which there would be a cost to the patient, the Center offered to hold regular free screenings to which teachers could bring their students and students' parents. At these screenings the low vision optometrists could determine who would benefit from further low vision services and could explain the value of these services to parents. Persons unable to come to the Center for services would be referred to low vision optometrists in private practice or to a clinic near their homes, when available.

Center staff are seriously concerned about the problems impeding partially sighted school children from receiving the low vision evaluations, aids, and training that can make a crucial difference in the quality of education they receive. Many administrators are afraid to recommend low vision evaluations for fear that their school systems will be held responsible for the cost of services and aids. Center staff have therefore consistently tried to work at all levels in the schools, and with the State Department of Education, the state legislature, and relevant national bodies in order to reverse this way of thinking. Informal contacts with teachers have caused many to refer the families of partially sighted children to the Center; and those teachers who have worked closely with the Center are now writing letters to officials in the State Department of Education and to state legislators expressing their belief in the value of teachers, parents, and low vision optometrists working together in the assessment and placement of partially sighted children. (See this chapter's section on Information Dissemination for a report on efforts to effect the relevant legislation.) A summer 1979 meeting with the Los Angeles Unified School District was held to encourage this large district to begin referring its students here and elsewhere for low vision services; unfortunately no action was taken in this direction by the District during the 1979-80 school year. In order to reach as many children as possible, Center staff have attended professional gatherings of teachers and administrators of the visually impaired (for example, the annual conference of the California Transcribers and Educators of the Visually Handicapped) to meet teachers and inform them about Center services first-hand. Further, staff members have gone to several school districts to give lectures during inservice training sessions, and teachers have been welcomed for inservice programs at CPS. In addition, the Center has sent mailings to all universities with programs for teachers of the visually impaired and orientation/mobility instructors, and has given CPS tours to many students in these programs.

A special effort has been directed toward organizations for specific populations that overlap the partially sighted--for example, diabetics, persons with retinitis pigmentosa, the hearing impaired, and the like--so that professionals working with them become aware of the needs of the partially sighted in their population and resources available to them, including Center services. Through the contacts made with the American Diabetic Association, diabetic educators from local hospitals, and prominent endocrinologists, the Center hopes that persons with diabetic retinopathy will learn of its services. At a luncheon that took place after her appointment at the Center, the local chairperson of the Retinitis Pigmentosa Foundation took out the monocular she had just been dispensed at the Center, looked at the clock on the wall and said, "This is the first minute hand I've seen in years!"; we feel confident that through her efforts and her example persons with RP will learn about Center services. CPS staff members hope to work with audiologists in contact with the hearing impaired so that effective services can be provided to older adults who are experiencing loss of both vision and hearing. The Center has built a good working relationship with the local center for independent living (WCIL), and an article about CPS services is appearing in a forthcoming issue of that Center's newsletter, In Touch.

For general outreach purposes, the Center has repeated its contact with all pertinent directories and information/referral services that are useful to the visually impaired, updating its entries in the CRIB books published by the Department of Public Social Service, the INFO directory published by United Way, and various other local and county-wide services. CPS staff members have also maintained contact with legislative bodies, advocacy groups, and relevant government committees at the local, state, and national levels both for outreach and information dissemination purposes. It is hoped that these contacts will help to publicize the needs of the partially sighted and to make known available resources, as well as to encourage the development of facilities like CPS elsewhere.

Finally, via its public relations campaign the Center has initiated a much broader outreach program that will help to raise the awareness level of the general public about the partially sighted. The CPS public relations campaign consists of two relatively independent efforts--one carried on primarily by members of its own staff in conjunction with the public relations staff of the Santa Monica Hospital Medical Center, and another conducted by Solters, Roskin and Friedman, a prominent public relations firm based in Los Angeles and New York.

As a result of the CPS-based public relations effort, articles have appeared in the Santa Monica Hospital Medical Center's Pacesetter, a quarterly publication with a distribution of approximately 33,000. One story featured the Center's unique PEACer follow-up visits, and another focused on the Peer Counselor program. (See Appendix M for samples of these articles.) Briefer stories covered the gifts presented to the Center by organizations such as the Elks and by private individuals, as well as honors awarded the Center director. The Los Angeles Times ran a lengthy story about the Center director and the CPS multidisciplinary approach. This article also points up two advocacy areas in which the Center is interested. The first is the problem of partially sighted public school students frequently not getting the kind of visual assistance they need to be "mainstreamed" successfully; the second is the problem that Medicare does not cover the cost of low vision examinations and visual aids with the exception of the first pair of glasses following cataract surgery. The Santa Monica Outlook has also covered the CPS PEACer program, the interactive classroom television system (ICTS) set up by Center personnel (while still on the staff of The Rand Corporation) in a local public school, and the philosophy of CPS and its director. The Palisadian Post printed a story on the beauty care lecture demonstration presented at the Santa Monica Hospital Medical Center to partially sighted women by Aida Grey, the renowned beauty expert.

With the approval of NIHR the firm of Solters, Roskin and Friedman was engaged by CPS for a three-month period beginning January 1980, in order to bring the Center to the attention of a large, broadly based national audience. This exposure has already elicited a large volume of inquiries that will put partially sighted persons all over the country in touch with resources available to them, and hopefully it will also result in inquiries that in turn will lead to substantial financial support of the Center by private persons and organizations that learn about its goals and needs. Thus far, as a result of the efforts of Solters, Roskin and Friedman, excellent stories focusing on the Center and its director have appeared in the Washington Post and the New York Times. Both have been picked up by other newspapers nationally, and in the case of the New York Times, the story has appeared in both the print and recorded versions of the New York Times Large Type Weekly. In addition, Senator Jennings Randolph of West Virginia saw fit to reprint the Washington Post article in the Congressional Record, together with a very complimentary introduction. Stories also have appeared in The News World and in a number of papers belonging to the King Features Syndicate.

A number of radio interviews with the Center director have already been aired in Los Angeles, New York, and Washington, D.C., while several radio interviews, including one with National Public Radio's "All Things Considered," have already taken place and are waiting for air dates.

Additional newspaper coverage has also appeared or has been planned in the Star and Grit, national publications with varied, broad based circulation. We also hope to interest Reader's Digest in doing a follow-up story to its January 1971 article, "Sam Genensky's Marvelous Seeing Machine," and the American Association of Retired Persons is considering an article for its publication, Modern Maturity. Interest has been indicated in filming segments on CPS by NBC for its show "Prime Time Saturday" and ABC for "Good Morning America" and/or its new science series called "Quest."

As of May 31 1980, CPS had received more than 290 telephone and mail inquiries from partially sighted persons or members of their families seeking low vision information and assistance. Inquiries from local residents have resulted in appointments for examinations at the Center. The large majority of the requests for assistance have been from other parts of the country. In those instances, we have sent general information about CPS and the value of a low vision examination (see Appendix N), and a return card through which the person inquiring can indicate interest in receiving our informational brochures on the partially sighted when they are ready for distribution. Where necessary, we have answered questions about the partially sighted person's specific visual problem and have referred the person to one or more low vision specialists in the appropriate geographic area. In order to make these referrals, CPS staff have developed, with the assistance of some of the nation's leading low vision specialists, a referral file of specialists throughout the country, including those in private practice, those associated with colleges of optometry or medical schools, and a number of low vision clinics.

In addition to the public relations campaign, the Center has spent time on specific fundraising efforts to allow it to become less dependent on tax dollars.

These efforts are discussed later in the Information Dissemination section of this chapter.

Resource Referrals

The purpose of CPS resource referral activities is to assist patients with their educational, vocational, social, recreational, trasportation, financial, and other social-service needs. Two basic modes of resource referrals have been made by the community resource/outreach coordinator during the period covered by this report. Individual referrals have been made at the request of a staff member or of patients themselves; and packages of standardized information have been and are being developed to meet needs shared by significant groups of patients.

Individual referrals may be requested by optometrists, psychologists, PEACers, low vision assistants, other staff, and patients themselves. Staff interactions at patients' case conferences, initiated this year to improve coordination of services, have increased resource referrals; patient needs that might not otherwise have surfaced have been discovered because of questions raised during these discussions. Almost three-fifths of the resource referrals were made in an attempt to help older adults, approximately one-fourth to help persons between the ages of 18 and 60, and about one-sixth to help patients under 18. About a third of referrals related to various kinds of social service needs and another third provided information about activities available to the partially sighted, including activities sponsored by CPS. About one-sixth of the referrals attempted to meet transportation needs, and the remainder dealt with educational and vocational goals.

Social service referrals cover a broad range of needs and resources. Many patients require financial assistance to cover the cost of visual aids as well as to meet other needs. When the patient in need of a visual aid has been a child, we have first sought the aid of Lions Clubs and have often been successful. One Lions district even solicited the help of all of its affiliated clubs and purchased a closed circuit television system (CCTV) for home use in a family where three (and potentially four) of the children are partially sighted due to hereditary retinal degeneration. Unfortunately there remain a great many children and other partially sighted persons who need and cannot afford visual aids of all kinds, especially those as expensive as closed circuit TV systems. For example, a CPS low vision optometrist asked that the resource coordinator investigate possibilities for another child to have a closed circuit TV system at home; in this case we found that all local resources would have to be pooled just to provide one at the boy's school, which had not yet been able to include a CCTV system in its budget. This boy, who is severely visually impaired and legally blind, definitely needs a closed circuit television system at school and ideally should have one at home if he is to make maximum use of his visual and educational potential, but he, like many other partially sighted children, will not be able to obtain one until there is some third party payer to help. We are presently working with an ophthalmologist on the board of California Children's Services to investigate this agency as a source of assistance to families of partially sighted children.

Older adults likewise have problems paying for visual aids, especially the more expensive ones. While the California Department of Rehabilitation will cover the cost of aids for working adults and will assume responsibility for inexpensive aids that can help older persons with independent living and home skills, most district offices cannot cover the cost of microscopic or telescopic spectacle systems for older adults who are not in the full-time work market but whose limited income cannot enable them to purchase such aids. The Center is seeking to develop a fund to help persons who cannot cover the cost of their visual aids, and hopes to have accomplished this aim by the end of the next project year. But even such a fund will not extend to all the people who need assistance, and for this reason CPS staff are doing everything possible to stimulate legislative changes so that low vision examinations and visual aids and training will be covered by Medicare funds.

Many social service referrals provide older adults with age- and vision-related services, including resources for learning efficient home skills despite visual problems, housekeeper assistance, hearing loss programs, stroke rehabilitation programs, housing information, information about financial benefits that might be available, meals-on-wheels, and the like. CPS has developed good working relationships with area senior specialists, senior centers, and information/referral agencies so that individual needs can be met relatively expediently. Partially sighted persons of all ages are helped by other social services included in the resource files: advocacy organizations, counseling resources, directional services, diabetic education programs, genetic counseling. As more needs are discovered at case conferences, the resource files expand with information that will benefit future patients.

Recreational activities are sought by many CPS patients, especially older adults, and the Center has responded by providing information on a case-by-case basis and by sponsoring activities that can meet common needs of its patient population. In the case of older adults who have tended to spend most of their time at home since their visual loss, the resource coordinator tries to do more than just give information about a local senior center or similar facility. By phoning a contact person at the organization, she arranges for someone to speak to these patients, inviting them to an activity or offering to show them around. In this way it is hoped that the referred individuals will feel encouraged to retain or regain an active way of life.

For younger patients, information has been provided to parents of partially sighted children about recreational activities available to them. It is relatively common for parents to find that their children are dissatisfied with recreation organized specifically for blind children, and also to learn that nonhandicapped recreational clubs fear insurance problems and so do not offer services to their child. The resource coordinator has been able to determine which YMCAs or YWCAs can offer good programs for partially sighted children, and has researched other possibilities for parents who requested information. We are hoping to sponsor a day hike into the Santa Monica Mountains for student patients during the summer of 1980, and have been in contact with the Santa Monica Mountains Program staff toward this goal.

CPS sponsored activities have included several trips to the Hollywood Bowl,which made free tickets available to visually impaired persons and those accompanying them; a similar trip to a Dodgers game; and a beauty care lecture demonstration graciously given by Aida Grey, the renowned beauty expert. A picnic held at the end of summer 1979 attracted 100 persons with wonderful potluck fare, and we are planning a similar event for this year. We are also investigating possibilities for a folk dancing group and photography and art classes for the many patients who have expressed an interest in such activities. CPS staff hope to continue to offer a variety of similar activities; we are attempting to enlist volunteer efforts toward this goal.

Transportation remains the single need most often mentioned by patients themselves. While older adults are most seriously affected by this problem, all age groups experience severe inconvenience due to their dependence on public transportation. Patients of all ages find it difficult, and sometimes impossible, to get to the Center for their appointments; many have expressed their disappointment at not being able to attend group sessions because of transportation problems. While it is not cost-efficient for the Center to purchase a van at this stage in its operation, it is also not likely, given the gas situation, that we will be able to develop the pool of volunteer drivers we had hoped to enlist for help with this problem. We have used the services of the Westside Community for Independent Living whenever persons in need of transportation were eligible for its van, but many of our patients do not live in the westside area. Some method must be devised to assist persons who have to travel long distances alone: perhaps different senior-ride services could arrange contact points so that an older adult with visual problems could, by linking them, go outside of his/her neighborhood to receive services that would not otherwise be available. The Center can publicize this problem and urge its solution, but it cannot now effect a solution itself.

Referrals to resources for vocational counseling and placement services are given to patients of all ages by the CPS resource coordinator. While most persons needing such services have been between the ages of 18 and 60, several high-school-age patients have been referred to CDR for early counseling, and many older adults have requested information about agencies that could help them to find part-time employment. We have identified several resources for the latter purpose and have given the information to older persons who wanted to work. CDR has expressed interest in helping older adults with this aim, but its counselors frequently encounter difficulties due to the special needs of the older partially sighted population, the desire for part-time work only, and CDR budgetary problems. It is hoped that as CDR gains more experience working with this population, more options will become available to partially sighted older adults who want to work.

Many CPS patients who are of traditional working age have already been in contact with CDR and may even have been referred to the Center by that agency; but there do exist other adults who are unaware of CDR services. The resource coordinator makes CDR referrals wherever possible, and in cases where a patient is already a CDR client, the coordinator will act as a liaison to assure that there is good communication among all parties and that full services result. When appropriate, patients are referred to other vocational agencies that can offer further counseling or placement services--all of the agencies mentioned in the Outreach section of this chapter, for example.

The CPS staff have developed a serious concern for a specific subset of its population who want to work but face complicated impediments because of special problems--the many diabetics who have developed retinopathy as well as other complications of their disease. In conjunction with the local chapter of the American Diabetes Association, area endocrinologists, and persons with expertise in vocational counseling and placement for the visually impaired, we are hoping to investigate vocational possibilities and support for diabetic persons of all ages. The Center sees a substantial number of persons with retinopathy (46 between May 1979 and March 1980), and has found employment to be a major problem for diabetics of all ages.

It should be acknowledged that many CPS patients with working potential, including but not limited to those with diabetic problems, have been unable to find employment that they consider worthwhile. Age- and impairment-related barriers in the employment realm continue to limit the possibilities available to many CPS patients despite visual aids that enhance their capabilities. Some patients simply cannot find suitable work. Others are discouraged by the fact that over a long period of time their disability benefits might yield a better income than the kind of work they can secure after a substantial visual loss. Whenever possible, persons with such problems or questions are encouraged to come to the working-age group, and many receive individual counseling as well. CPS is planning a "Careers Day," at which speakers from CDR and potential employers will lecture and be available for discussion with patients. These efforts are aimed at enabling patients to lead fully productive and independent lives insofar as is possible.

With respect to the educational needs of its patients, CPS has been able to assist in several ways. The community resource coordinator has provided information about school opportunities available to families who had not yet enrolled their child in school or who were not satisfied with their child's placement. In other cases, we have been able to intervene to help parents attain services for their children in the schools in which they were already enrolled. We have developed an excellent working relationship with most of the school districts with which we have been in contact, and have received feedback that our reporting system is well suited to the schools' and students' needs (see Appendix C5). The PEACers have visited area schools to help both VH teachers and regular teachers of our partially sighted student patients, and this system has contributed a great deal to the relationship between CPS and local educational agencies.

Older adults have also been assisted to take advantage of educational programs available to them. The resource coordinator has organized information about various classes available through senior centers, emeritus programs, and regular college offerings; this information is available to anyone who wants it, and specific referrals have been made whenever requested. Several CPS patients have proved to be excellent emeritus students. One of the CPS peer counselors didn't know how she reached this age without having taken a class in Shakespeare and remedied that forthwith. Another woman exhibited a real artistic talent that hadn't previously found expression but is now in great demand by CPS staff, among others. By now patients are not only requesting information about resources but also bringing news to the CPS about programs they have discovered and tested on their own.

Now that a substantial data base for individual resource referrals has been developed and common patient needs are being anticipated, the Center has been organizing packages of information designed to serve needs shared by many of its patients. Parents of partially sighted children have been receiving a package that includes information about the legislation affecting the education of handicapped children, as well as information about national and local advocacy and support groups to help them with respect to their children's visual problems. A one-page handout on transportation fare reductions for the legally blind is given to all patients who are eligible for them. Materials are being developed to inform diabetic patients of resources available to them, and a general handout detailing benefits for which partially sighted patients might be eligible is also being written. The staff have also discussed the possibility of initiating a bi-monthly large print newsletter to CPS patients. The newsletter would announce dates of group meetings and would focus on different types of resources that meet commonly encountered needs and problems; any CPS-sponsored activities during the time period would also be covered. Such a newsletter could be used to generate more involvement on the part of patients, who in turn might organize other activities or join the volunteers already helping the Center.

Information Dissemination

CPS has been preparing and disseminating information on the partially sighted to persons in that population, to professionals who work with them, and to the general public. The general goals of information dissemination are to raise the level of awareness concerning the partially sighted and their needs and capabilities, and to improve the services and options available to them. Specific activities include: preparation and distribution of brochures for and about the partially sighted; implementation of training programs for professionals and paraprofessionals; identification of appropriate audiences for lectures, panels, workshops, conferences, and journal articles; encouragement of similar services and centers elsewhere; and identification of persons and organizations that could potentially support the Center and its patients.

Since the beginning of October 1979, Center staff members have met several times to plan and work on two brochures; a general information brochure discussing the nature of the partially sighted population, and a brochure directed specifically to the partially sighted that contains information for improving the home environment and facilitating personal travel. The general brochure defines and describes the partially sighted population, dispels common myths regarding the partially sighted, discusses considerations related to visual impairment throughout the life cycle, emphasizes the value of low vision examinations and proper prescription and training in the use of visual aids, and offers to answer any individual inquiries about the partially sighted and services available to them. The home and travel brochure offers advice about how to deal with vision-related problems in the home and how to get around safely and comfortably alone by making maximal use of residual vision with and without the use of visual aids. Both brochures will be ready for distribution to organizations in contact with the partially sighted by the end of the calendar year.

Throughout the project year, CPS staff have given presentations to many groups of professionals and paraprofessionals who work with the partially sighted. Among such audiences are many groups from the vision community. The Center director gave two presentations at the December 1979 annual meeting of the American Academy of Optometry (AAO)--one to the Low Vision Section of that meeting, and the other to a meeting of the general membership. (These presentations evoked comment to the effect that the CPS offers the most integrated and comprehensive services available to partially sighted persons in the United States.) The director also gave a presentation to the ophthalmological residents and nursing staff of the Jules Stein Eye Institute at UCLA in the fall of 1979. Presentations to ophthalmological centers are considered particularly important by the CPS staff because ophthalmologists are frequently unaware of what can help the partially sighted after medicine has done all it can. Therefore, with the assistance of an ophthalmologist on the CPS Advisory Board, we are planning to increase our contact with the ophthalmological staffs of other hospitals during the remainder of this and future years.

Other agencies and individuals working in the field of visual impairment have also received presentations by representatives of CPS. Our chief low vision optometrist gave a slide-lecture-demonstration at the Northwest Conference of the American Council of the Blind during the fall of 1979. The community resource/outreach coordinator spent a morning at the Center with members of the staff of the Braille Institute, after which there was consensus that the partially sighted should be trained to use their remaining eyesight whenever possible. Another CPS staff member spoke at a gathering of representatives of several organizations working with the visually impaired at the local Veterans Administration Hospital in February 1980. In January 1980 the Center director, who is partially sighted and legally blind, participated in a panel discussion on career opportunities in science for handicapped students at the Irvine campus of the University of California. The audience for this panel discussion was made up of handicapped students and professionals working with such students.

While no formal training program has yet been established, one of the leading low vision specialists at the Southern California College of Optometry has agreed to spend time at the Center each month, and to bring with him some of the optometry students interested in low vision. These sessions are intended to acquaint optometry students with the Center's holistic approach to the visual care of partially sighted persons, which includes optometric, psychological, educational, and social services.

In addition, an optometrist who is doing a residency in low vision and rehabilitative optometry in a joint program with the Veterans Administration and the Southern California College of Optometry has come to the Center on a number of occasions to learn about its multifaceted approach to the care of partially sighted persons; and a recent graduate of the New England College of Optometry is spending the month of May 1980 at the Center on a similar residency program under the direction of the Center's optometric staff.

Teachers of the visually impaired will continue to be a priority group for CPS information dissemination, since the field of low vision is relatively new and frequently not covered in sufficient depth in teacher training programs. A CPS low vision optometrist, the CPS orientation and mobility instructor, and a VH teacher (who is himself partially sighted) from the local Santa Monica School District gave a workshop entitled "Low Vision Aids in the School and at

Work" at the recent annual conference of California Transcribers and Educators of the Visually Handicapped (CTEVH); this session will be repeated at the Center and at several school districts as an inservice training program for their VH teachers. The team will also publish this presentation in a future issue of the Journal of Visual Impairment and Blindness. Inservice training sessions of a less formal nature have already been given by CPS staff members at the Center and at area school districts. The community resource/outreach coordinator joined a low vision optometrist from Santa Barbara to give a lecture to teachers, parents, and students from the Santa Barbara Unified School District's program for the visually impaired; and the entire VH staff of that district joined two Santa Barbara rehabilitation counselors to spend a day at the Center, where they heard presentations by various staff members and viewed the film "Visual Equality," reporting on the results of the interactive classroom television system research conducted by The Rand Corporation and CPS.* The VH staff of the Riverside School District spent a similar day at the Center, and many teachers from Los Angeles County schools have spent parts of days here as well. A presentation by a CPS optometrist and the community resource/outreach coordinator was given to three neighboring school districts' parents and teachers in early May 1980, with similar presentations anticipated to occur throughout the next academic year.

CPS staff have also contacted many training programs for teachers and other professionals who will work with the visually impaired. The director gives regular presentations at the special education class taught by a VH administrator at the California State University-Northridge, and students from these classes have come to the Center in great numbers to fulfill their observation requirements. Students from the orientation and mobility program at California State University-Los Angeles have spent similar observation time at CPS. A professor of neuropathology from that university contacted the Center to arrange for her students, who will be working in the field of speech rehabilitation for stroke victims, to spend an afternoon at the Center learning about the visual problems of their patient population and what can be done to help them. The chairman of the Department of Special Education at UCLA sent a researcher to CPS to learn about the needs of partially sighted children for the chapter of his forthcoming book dealing with education of the visually impaired. There has been sufficient interest in needs of and services for the partially sighted to require a CPS lecture/tour almost every week. Finally, a number of visitors from other states and countries have come to the Center for short tours or for periods of several days. Our visitors' log includes persons from Montana, New York, Ohio, Illinois, Florida, Alaska, Arizona, Washington, Nevada, Oregon, New Mexico, Texas, Oklahoma, Utah, Arkansas, North Carolina, Minnesota, Massachusetts, Idaho, Tennessee, Maryland, and Michigan as well as from Sri Lanka, Australia, Canada, Great Britain, Ireland, Sweden, Holland, Peru, and Indonesia. Such visitors frequently remark on the comprehensiveness of the services offered by CPS and on the extensiveness of its follow-up procedures. In addition, the Center director gave a lecture on the partially sighted and on the services offered by CPS to the Jerusalem Society for the Prevention of Blindness while visiting Israel in summer 1979. All of these exchanges and presentations work toward the goal of encouraging development of similar centers and services elsewhere in the nation and in the world.

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*Bikson, T. K., T. H. Bikson, and S. M. Genensky, The Impact of Interactive Classroom Television Systems on the Educational Experiences of Severely Visually Impaired Students, The Rand Corporation, R-2395-HEW, September 1979.

CPS also makes presentations to professionals and paraprofessionals who work with older adults, since the incidence of severely impaired vision rises dramatically with age. At the annual meeting of the Western Gerontological Association, CPS was represented by a panel consisting of its chief clinical psychologist, its chief optometrist, the director, and the evaluation coordinator. After their seminar, a participant from the American Foundation for the Blind remarked that this session had been the highlight of her day and had made the conference a resounding success for her. The chief psychologist also gave a workshop for participants in the Santa Monica Peer Counseling Program for the Elderly (PEP) Program. PEP counselors have contact with older persons throughout the Santa Monica and Westside area, and can benefit from learning who the partially sighted are and how they can continue to live independently by using their remaining eyesight.

CPS has also begun to make contact with psychologists at various mental health centers throughout the Los Angeles area so that we can identify and train professionals who will be able to offer counseling services to partially sighted people who cannot come to the Center. We are especially concerned that Spanish-speaking counselors be trained since we have seen many Hispanic patients who are not able to receive extended counseling services here, due to both language and geographic factors.

The wider rehabilitation community is another important audience for CPS information dissemination. In January 1980 the Center director met with Dr. Margaret Giannini, the new director of NIHR, to discuss the needs of the partially sighted; and in March 1980 he met with Ms. Judith Wegner, a member of the Department of Education's transition team, with similar intent, The REHAB BRIEF[*] distributed by the Rehabilitation Research Institute (funded by HEW) printed a summary of the recent CPS report entitled Visual Environmental

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[*] REHAB BRIEF, Rehabilitation Research Institute, University of Florida, Gainesville, Florida, Vol. III, No. 4, February 20, 1980.

Adaptation Problems of the Partially Sighted,[*] after which many rehabilitation agencies and organizations dealing with the handicapped wrote to request copies of that report and other information available through the Center. The CPS director, as a member of the Advisory Committee on Services to the Blind and Partially Sighted to the California Department of Rehabilitation, has had regular input at the state level regarding rehabilitation activities. Finally, at the local level, the CPS community resource/outreach coordinator took part in a seminar on "Job-Finding Techniques for the Handicapped" at the Santa Monica Office of Employment in March 1980.

There has been considerable input of the CPS approach toward problems of the partially sighted via the director's participation in several important committees and organizations. For example, during 1979 he served as a member of the one-year National Implementation Advisory Committee on the findings of the White House Conference on Handicapped Individuals. He also has served and is continuing to serve on several Low Vision Advisory Committees to the American Foundation for the Blind. He is a member of the National Accreditation Council Ad Hoc Committee to establish standards for comprehensive low vision care. In addition, the Center director is serving his second year as president of a new national advocacy organization specifically for the visually impaired, the Council of Citizens with Low Vision (CCLV), an affiliate of the American Council of the Blind. Finally, he is beginning his fourth three-year term on the Board of Trustees of the Southern California College of Optometry. Accordingly, his participation in all these organizations assists in the flow of information between the Center and other professionals and consumers in the visually impaired community.

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[*] Genensky, S. M., S. H. Berry, T. H. Bikson, and T. K. Bikson, Visual Environmental Adaptation Problems of the Partially Sighted: Final Report, Santa Monica Hospital Medical Center, Center for the Partially Sighted, CPS-100-HEW, January 1979.

Besides its generic endeavor to disseminate information about the nature of severely reduced vision and appropriate services, the Center focuses substantial dissemination efforts on special issues. Relative to architectural and environmental barriers, the Center staff has been disseminating information to many audiences in an effort to make travel through varied environments safer and more visually feasible for partially sighted persons. The Center director has written an article (Architectural Record, May 1980) and has given testimony to the Santa Monica City Council (see Appendix O) relative to these barriers and their alleviation. The Center has disseminated similar information to many organizations and commissions involved with architectural regulations and transportation systems. As a result, the city engineer of the City of Santa Monica has informed the Center that Santa Monica plans to remove such barriers during the next 18 months. The report on visual environmental adaptation problems of the partially sighted continues to be distributed to persons in the fields of architecture and transportation. In addition, the community resource/outreach coordinator represents the interests of the partially sighted on the state Coalition for Strong Access Regulations, which is working toward modification and passage of improved state regulations for architectural projects.

Several legislative issues of serious concern to the partially sighted have involved the Center with local, state, and national levels of government. In addition to legislative action pertaining to architectural and environmental barriers mentioned above, the Center has been involved in three major areas of legislative activity: (1) urging that the federal government put more money into the "comprehensive rehabilitation center" program, as described in Section 305 of Public Law 95-602, to cover at least part of the cost of centers like CPS; (2) extending Medicare coverage to include the cost of low vision examinations and visual aids for older Americans; and (3) urging that as part of Public Law 94-142 and the California Master Plan for educating handicapped children, all partially sighted children receive periodic low vision examinations, appropriate visual aids, and training in the use of those aids as part of their school assessment procedures.

Public Law 95-602, Section 305, describes comprehensive rehabilitation centers to be established "in order to provide a broad range of services to handicapped individuals, including information and referral services, counseling services, and job placement, health, educational, social, and recreational services, as well as to provide facilities for recreational activities." From this section we infer that Congress is directing RSA to provide monies to the several states to establish and operate comprehensive rehabilitation centers that can provide all or some of the enumerated services to one or more handicapped groups that either receive inadequate services, the wrong services, or no services at all. It is our belief that the partially sighted constitute such a population, and that CPS represents such a comprehensive rehabilitation center. Therefore, we have established and maintained contact with appropriate government officials, including Mr. Robert Humphreys, the Commissioner of RSA. The Center director submitted testimony on this subject to Senator Jennings Randolph's (West Virginia) Subcommittee on the Handicapped of the Senate Committee on Labor and Human Resources in November 1979; similar testimony was presented to Congressman William Natcher's (Kentucky) Appropriations Subcommittee on Labor, Health, Education, and Welfare in April 1980.

Relative to the Medicare issue, it is distressing that Medicare does not cover the cost of examinations and visual aids for partially sighted older adults unless they have had cataract surgery and are in need of cataract spectacles. This limited coverage is defended by the argument that in cases of aphakic persons, a visual aid replaces the living lens and is thus eligible for compensation under Medicare. We argue that regardless of what caused a visual loss, any visual aids that allow persons to use their eyesight in spite of impairments should be looked upon as replacing or supplementing damaged or inoperative portions of the human eye, and hence should likewise be covered under the Medicare Plan. Legislation will soon be introduced by Senator Howard Metzenbaum of Ohio that, if approved by the Congress, will require Medicare to cover the cost of low vision examinations and visual aids for older Americans. We have worked with Senator Metzenbaum's staff in the preparation of this legislation. We have also informed members of the staffs of the American Academy of Ophthalmology, the American Council of the Blind, the Council of Citizens with Low Vision, and the American Optometric Association (AOA) of this pending legislation.

The Center is equally concerned about school systems that make no effort to inform parents of partially sighted children about low vision examinations, low vision aids, and training in the use of these aids. Possibly they fear that if such parents are informed, they will request that the school systems pay for the examinations, aids, and training in the use of the aids. This situation should be remedied immediately. To this end the director has met with key personnel of the California Department of Education and the California Optometric Association (COA). These meetings were aimed toward developing a strategy for effecting early and periodic low vision examinations for partially sighted children in the public schools. There are two obstacles to the proposed change: money, which has not been provided in sufficient quantity to back up the goals of Public Law 94-142 (schools perceive that they cannot now afford the cost of such examinations, visual aids, and training); and clear criteria as to what exactly constitutes a low vision examination and who is a low vision specialist.

We are currently cooperating with the AoA and CoA to define precisely what low vision examination is and to identify professionals who are capable of conducting such examinations. We are also working with the associations of teachers of the visually impaired and with members of the partially sighted population themselves, in order to demonstrate broad based support for this goal. We expect to have testimony given and resolutions passed by relevant groups to be forwarded to appropriate state and federal legislators, who can then bring about the needed changes in the legislation affecting education of partially sighted children.

One very specialized type of information dissemination in which we have been involved over the past year works toward the goal of future *fundraising* for CPS. Government grants and contracts are limited, and the Center seeks a broad base of financial support from both the public and private sectors of our society. The Center's *Advisory Board* has been involved with staff in this effort. The vice-chairperson of the board, who has herself been a patient at CPS, sent a letter soliciting contributions to all patients; it generated $3,692 from 116 patients, representing a positive response rate in excess of 14.7%. Another board member appealed to his Elks Club and received a donation of $1,500. The Board chairperson will be instrumental in our contacts with many foundations and other organizations that may potentially support the Center. We have already applied in person and in writing to the California Community Foundation, and are in the process of composing and distributing a proposal letter to several other foundations that have already been identified as good possibililties for Center support. Practically speaking, foundations may not prove to be a source of long-range support to the Center because of their tendency not to provide operating funds and their preference for one-time grants. However, funds derived from foundations could, for example, be useful in defraying expenses for persons who cannot afford the cost of their visual aids.

Conclusions and Projections

In general, the Center has developed closer working relationships with many community agencies important to its patient population over this past year. More persons who have contact with the partially sighted are aware of their needs and of the resources available to them, and we have developed a substantial well-organized body of information about resources to which we can refer our patients. Nevertheless, there remain some patient needs for which current resources are inadequate, and we are aware that a good deal more work must be done relative to gaining public exposure regarding the partially sighted and their needs and capabilities.

With respect to outreach activities, the Center has fulfilled the objectives set out in its initial proposal and reaffirmed in last year's report. While we are concerned about whether the introduction of a fee schedule will decrease patient referrals to CPS by ophthalmologists, the percentage of patients referred by this group during the past 11 months overall has risen even higher than the very high percentage for last year (see current year project data summarized below). Our communication with these professionals has been persistent and sincere, and we believe we are demonstrating the value, uniqueness, and cost-effectiveness of Center services. The involvement of two prominent ophthalmologists on our Board of Advisors promises to help us in this regard. Consequently, ophthalmologist referrals are expected to remain reasonably high. Optometrists were targeted as a special goal for outreach activities in last year's report, and we took part in several meetings and sent out one large mailing toward that goal. These activities netted only a very slight increase in referrals from optometrists; however, we believe we established a closer working relationship with some of the low vision optometrists in private practice in the area, three of whom have been urged to spend some time working at CPS as consultants.

Off-site screenings to identify partially sighted persons have proceeded on schedule; CPS conducted screenings at the rate of one every two months. (See Appendix Q for a list of sites, number of persons screened, and number of partially sighted persons identified.) We specified minority and low-income persons as special target groups for this year's efforts, which yielded a small increase in minority patients and a more substantial increase in low-income patients at the Center. While 86 percent of the persons on whom we reported in last year's report were white, 79 percent of those in this year's data base are white. Last year 28 percent of CPS patients earned less than $5,000; 41 percent of this year's patients fall into this income category; concomitantly, the proportion of persons reporting they earn $10,000 or more annually fell from 50 percent to 31 percent for this year's patients (see data summary). The age distribution of our patients has not changed dramatically. Although we have made a concentrated effort to reach younger patients in proportion to their reported incidence in the partially sighted population, the proportion of persons in the younger patient group (0-20) rose only 2 percent over the last year. We are pleased that older adults are learning about and taking advantage of CPS services, and hope to accomplish this goal with greater success for the entire partially sighted population. We recognize that the cost of services and aids represents a significant barrier to this aim, however, especially relative to school children.

With respect to community resource referrals, we have served on average 20 persons each month. When a CPS staff member has recognized a patient's need for such assistance, we have typically been able to provide relevant information and to facilitate effective contact between the person and the agency. In this respect Center activities have exceeded those projected in the proposal or the previous annual reports. Nevertheless, we are keenly aware of two significant factors limiting our ability to help patients with their vision-related educational, vocational, recreational, transportation, and social service needs. First, we may not learn of important needs that are not readily apparent during patients' visits. Regular case conferences and PEACer visits to patients' homes provide considerable additional information, but several staff members believe that a brief discussion with someone knowledgeable about community resources should be part of every patient's treatment plan. Present staffing arrangements make this impossible, however. Second, there are crucial patient needs for which information and referral are simply not enough--for example, the need for financial assistance to cover the cost of visual examinations and aids, the need for suitable employment that takes into consideration vision- and age-related factors, and the need for transportation for impaired or older persons. CPS is publicizing these needs in the hope that they can be met more efficiently and fully by other responsible agencies. As changes occur with respect to these situations, we will be able to pass that information on to any patients who can benefit from such improvements. Standardized packages have been or are being developed to provide information about needs shared by many patients (e.g., financial benefits, transportation benefits, genetic counseling resources, diabetic education resources, legislative information). Concentrated effort has been devoted to monitoring school placements and reporting to school personnel as well as to maintaining close contact with rehabilitation counselors to assure our patients full and appropriate services from schools and rehabilitation agencies. Finally, the activities sponsored by the Center have encouraged patients to develop and take advantage of an important available resource--their peer support network--which we hope to continue to stimulate and improve.

Information dissemination activities have proceeded on or ahead of schedule. The two brochures described in the Information Dissemination section of this chapter will be ready for distribution by the end of this calendar year. CPS staff have made several presentations to gatherings of ophthalmologists, optometrists, rehabilitation personnel, teachers, and other professionals in contact with the partially sighted population. We have given high priority to the support of legislative issues that have a critical impact on the partially sighted. Articles have appeared in important newspapers and magazines, radio interviews have been broadcast, and CPS is on a waiting list for exposure via public service announcements on radio and television stations. Preliminary contacts have been made for television coverage of the partially sighted and CPS in an effort to increase the general public's awareness of these issues. We will have sought the assistance of appropriate foundations by the end of this project year.

In sum, the Center highly values its working relationship with other community agencies and with the many groups mentioned in this section. The continuous flow of communication and efforts at coordination with other resources demand a great deal of time and activity from Center staff, but we believe that this effort is worthwhile.

While we recognize that important headway has been made toward outreach, resource referral, and information dissemination goals, we plan to increase our efforts in these areas during the next project year. With the projected addition of a staff member to supervise intake procedures and to assume the responsibility for resource referrals, the present community resource/outreach coordinator will devote more concentrated attention to broad outreach goals along with information dissemination and fundraising objectives. In addition, a graduate student from a local human development program may be assigned to CPS as a community field work placement, in which case the Center would be able to devote an additional one to two days of staff time to outreach, referral, and dissemination goals.

Outreach presentations and screenings are projected to increase during the next funding year, with an aim of one off-site screening each month. Presentations in advance of such screenings, and other presentations to encourage persons to refer or to come to CPS, will continue as staff time permits. We will maintain our focus on ophthalmologists, and will continue our emphasis on offering supplementary services to optometrists in the area. We plan to continue outreach activities with school personnel, centers with concentrated groups of older adults, and rehabilitation agencies for adult visually impaired; and we will continue our emphasis on informing persons from lower economic backgrounds and minority groups about the availability of CPS services. Efforts will be directed to California Children's Services in the hope that arrangements can be made to cover the cost of low vision examinations and aids for children from low-income families. Concurrently we will support legislation and funding so that low vision examinations and services can be provided for all partially sighted children as a matter of course.

Given the addition of a staff member with a social work background, we hope to meet the vision-related educational, vocational, and social-service referral needs of our patients more systematically and completely. A brief interview with each patient after the case history will determine whether the patient has special needs for which information and referral to a community resource may be helpful. For example. if persons are legally blind, they will be informed about benefits for which they may be eligible; if persons are diabetic, they will be notified of diabetic education and counseling programs in their area, and so on. Most important, individual needs that may have gone undetected will be probed during this interview and will be given appropriate attention and referral. Further, closer contact and more extensive follow-up with other agencies will be possible because of the increase in staff time allotted to resource activity. Finally, with this addition in staff time we hope to offer more CPS-sponsored activities to help patients develop peer support networks and to aid the transition to increased activity for a sizeable number of patients who have been less active than they would like since the onset of their visual loss.

With respect to information dissemination, we also anticipate increased activity during the next project year. Once the initial information brochures on the partially sighted (see above) are available, we hope to begin work on special brochures--for example, dealing with the needs of partially sighted older adults and with the needs of partially sighted children. We will continue to give presentations to groups of persons who work with the visually impaired. We expect an increase in the number of presentations to teachers, who have begun to request inservice programs more routinely; we are planning to conduct inservice training both at the Center and at the schools themselves.

To date informational presentations at schools have taken many forms, ranging from lecture/slide demonstrations directed primarily at teachers with backgrounds in special education of the visually handicapped to presentations that include role playing by students in large assemblies of school children. We will continue offering a variety of presentations to meet the needs of different populations in contact with the partially sighted, and plan to develop related articles for appropriate journals during the next year (e.g., Journal of Visual Impairment and Blindness). We also expect to expand the arena of groups to which we offer presentations; for example, bus drivers have often been mentioned as a valuable target group for information on the needs and capabilities of the partially sighted, to help alleviate difficulties faced by partially sighted persons who are dependent on the bus system for travel. Most important, we plan to initiate a training program for professionals and paraprofessionals from various disciplines interested in the Center as a model of comprehensive services for the partially sighted at the beginning of the next project year.

We will continue efforts directed to publicizing legislative matters that affect the partially sighted, including items that affect the funding of services offered by CPS. We expect to devote increased attention to fundraising and related public relations activities in order to assure continued funding for Center services. We will have applied to several foundations by the end of this project year, and will apply to others during the next year. We will also contact the public affairs officers of major corporations in the Los Angeles area in an effort to secure donations from these corporations. Finally, we hope to establish a volunteer speakers' bureau of former patients to address local service clubs and to request donations from these organizations.

E. RESEARCH AND EVALUATION

Research and evaluation activities are carried out by a number of Center staff members involved in data collection for purposes of providing a visual, psychosocial, and demographic description of the partially sighted population, guiding and improving service delivery, and evaluating Center activities as constitutive of a model program for meeting the needs of the severely visually impaired. However, tasks related specifically to design and formatting of obtained information so that it can be systematically integrated and analyzed are the primary responsibility of the evaluation coordinator and the consulting human development specialist, with the help of three part-time research assistants and a statistical programmer. Data collection can be understood as occurring during two widely separated periods in time: intake procedures, administered during patients' first two visits to the Center, provide one important body of information; follow-up procedures occur approximately six months after the first visit and supply a second wave of information about Center patients. These two procedures are discussed in order below.

Intake Procedures. Revised procedures for systematic gathering and recording of the first body of patient information were largely completed by May 1979 and serve as the basis for Center research and evaluation. All current data collection forms are displayed in Appendixes B, F, and G. References to these intake forms will be noted by letter and number; for instance, "B1" refers to Appendix B1. Data collection forms were subjected to extensive revision during 1978-1979, with revised versions being pilot tested during the summer of 1979. Thus most instruments have been used in their present form, precoded and precolumned for data entry, since October 1979. These materials are described briefly below.

- A verbal explanation of both clinical and research activities of the Center is provided the patient as set forth in the Patient Information Form (A1).

- The patient is asked to sign the Informed Consent Form (A3) and the Release of Information Form (A4). This release of information form is used either to request records from the patient's ophthalmologist or optometrist and/or to release their records from the Center to such persons.

- A Patient Log Sheet (B1) is then initiated that tracks pertinent information concerning the precise services rendered to the patient, including follow-up phone calls and on-site visits.

- Next, Part I of the Case History Form (B2) is administered. It includes information on the patient's past and current medical and visual problems and treatments, a description of low vision aids currently in use, a self-report of selected environmental problems, and psychological items tapping mood, morale, and expectations. (Psychosocial measures are not administered to patients 18 and younger.)

- At the close of the first interview, the patient is provided with a Detailed Explanation of Center Services (A2) and a copy of the Center brochure.

Administration of self-report forms requires from a minimum of 30 minutes to a maximum of 60 minutes. The initial low vision evaluation takes one and one-half to two hours. Because of fatigue factors that may depress performance, especially among older adults, three hours were specified as the maximum duration of the visit. Consequently, since visual measurements and self-report data could not typically be obtained within the three hour maximum limit, information gathering was divided into two parts.

Part II of the Case History (B3) is administered at the beginning of the second patient visit (usually one week after the initial visit). Part II includes demographic information and items tapping self-description* and quality of life. Duration of the second visit is similar to the first, with approximately 30 minutes spent on data collection and one hour spent on a continuation of the low vision evaluation and training. Optometric measures and clinical judgments made by the low vision specialists are summarized at the end of the case history (B3). Intake procedures for the first visit (A1 through B2) are administered by the Outpatient Registration Department (OPC) of the Santa Monica Hospital Medical Center (SMHMC) and by the low vision assistants. The low vision assistants alert the optometric staff to potentially significant interview responses. The remainder of the intake procedures (B3) are conducted by the research assistants, with clinical measures collected by low vision specialists as described in the visual evaluation protocol above.

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*Note: The third set of self-descriptive items, tapping age role concept, is administered only to patients aged 60 or older.

Follow-up Procedures. As described in the original proposal, environmental adaptation assistants were to observe patients at their home, school, or place of work, taking note of their functional ability within those environments and the nature of supportive relations among family members or significant others. As we began to implement this service modality in March 1979, we quickly saw the importance of these on-site visits and made them the central feature of Center follow-up efforts. Environmental adaptation assistants were renamed Personal Environmental Adjustment Counselors (PEAC) to better reflect their expanded functions.

Briefly, approximately six months after a patient's initial appointment with the Center, and on-site visit is scheduled to : (1) directly observe and evaluate the use of any low vision aids prescribed by Center optometrists (rather than asking patients to perform with the aids prescribed, we ask them to perform certain tasks appropriate to each aid received); (2) observe, at the same time, how well the patient has been able to resolve visual environmental adaptation problems previously reported, and note any unmentioned environmental hazards present; (3) question the patient directly concerning the observed successful or maladaptive use of the prescribed low vision aids; and (4) administer the repeated psychosocial measures as well as a patient satisfaction scale.

The information gathered during this on-site visit serves two functions. It provides low vision specialists (see the description above) with crucial follow-up information about patients' functional abilities outside a clinical environment. On the basis of this information (along with ongoing follow-up telephone calls), the optometrist may ask the patient to return to the Center for further assessment, training, or counseling. On the other hand, if the information indicates that the patient has successfully adapted, the optometrist may close the case with the option that the patient can return, particularly if visual conditions worsen. This same information will be central to the pre/post functional and psychosocial assessment of each patient and will be used to evaluate the long-term adequacy of services provided.

Forms for the follow-up procedures are found in Appendixes F and G. The PEAC Telephone and Visit Protocols (F1, F2) were established to insure the cooperation of the patient. Reports from the PEACers who pretested these procedures indicated that patients in general would be receptive to the on-site visit and in fact would enjoy contact with Center personnel. The Observation Forms (F3) are set up prior to the visit and include the nature of the visual impairment, other handicapping conditions, the low vision aids prescribed, the tasks for which they were intended, and the specific visual environmental adaptation problems reported by the patient during intake. Patient-generated goals and problems thus supply the basis for the follow-up evaluation; an attempt is made, through observation and interview, to determine whether aids, training, and environmental modification recommendations provided by the Center were successful in meeting patients' needs. Follow-up forms were pretested during the second project year. Finalization, precoding, and precolumning of the visual function components were completed in May 1979. Because psychosocial measures were repeated in precisely the same manner in which they were administered during patients' Center visits, they needed no further work. However, the Patient Satisfaction Scale (G2), normed and validated in a national study of health services delivery, had to be revised to apply specifically to low vision services. These changes were completed and a final draft follow-up form produced by October 1979.

Data Management. With all instruments in final form and all objective questions precoded and precolumned, remaining tasks for data management were relatively simple. First, codes had to be developed for all open-ended questions (e.g., items about referral sources, patients' goals, and purposes of appointments). Code categories were constructed on the basis of responses obtained in previous research related to problems of the partially sighted plus an examination of the raw data collected in the first part of the project year. These codes are reproduced in Appendix K. Next, a set of derived variables had to be formulated to facilitate analysis. For example, information about patients' ages was categorized so that subsequent responses could be examined in terms of age group; it was supposed that problems and goals of school-age patients would differ in many respects from those of working-age patients, and those would in turn differ from problems and goals of the aged. Further, summary variables were needed to represent overall extent of reliance on and usefulness of previous and currently prescribed low vision aids, patient depression, patient satisfaction, and so on. Finally, a codebook was devised documenting each variable by name, location, instrument item number, content, and range. These tasks were completed in February 1980.

On completion of the codebook, it was sent, together with keypunch instructions and a preliminary data set of 100 cases, to The Rand Corporation's data entry department. This small subset of cases was examined to insure that codes and data entry instructions were clear and accurate, that there were no undetected errors in the instruments, that derived variables could be constructed without difficulty, and that the automatic data cleaning specifications created with the assistance of data entry personnel would operate properly. Trial computations were carried out in March 1980 and indicated that the entire data management system was functioning correctly.

In the meantime, all open-ended questions from the instruments were coded using the established procedures, and patient logs were updated for the remaining cases. In order to allow sufficient time for data analysis and interpretation, it was decided that data collection for the present report would end on March 31, 1980, a cutoff that would yield 11 calendar months of data (information on approximately 560 patients). Accordingly, on April 1 raw data representing the period from May 1979 through March 1980 were submitted for keypunch. With procedures having been fully worked out in advance, the larger data set was entered and corrected rapidly; derived variables were built, and descriptive statistics were obtained within the month. Analytic and interpretive work was carried out in May, with the early part of June being reserved for reporting and for the development of research and policy implications. Results of that effort appear in the data summary section below.

Conclusions and Projections. With respect to both intake and follow-up procedures, we discovered that a substantial trial and error period was required before an acceptable information gathering strategy was achieved. Three critical problem areas were identified: (1) attempting to begin service delivery and its formal documentation at the same time; (2) deciding how to obtain the kinds and amounts of information necessary to provide comprehensive services and to establish a data base for research and evaluation within patient time constraints;

and (3) designing a method for quantifying aspects of clinical information relevant to research and evaluation. As we see it, these problems are in large measure attributable to establishing low vision services within the context of a research and development effort. The immediate demand for Center clinical services did not allow time initially for development and piloting of appropriate documentation forms. Simultaneously, a great deal of experimentation was needed in order to streamline information intake so that a maximum amount of useful data could be gathered in the shortest possible time; final intake revisions were not completed until the end of September 1979. These circumstances entailed that first and second year data are necessarily incomplete and problematic to integrate.

Like intake procedures, follow-up procedures also required a lengthy trial and error period, but for different reasons. Since information gathering for patient follow-up was not scheduled to begin until six months after the initial appointment, start-up time pressure was less critical. On the other hand, visiting patients at their homes or other places specified as sites where important visual goals were to be met necessitated the development of field protocols and procedures for which, to our knowledge, no precedents in low vision care existed; it posed a situation unique in the experience both of patients and of Center staff. Thus some patients--even though they had been told to expect a telephone call to arrange a home visit--seemed nevertheless surprised when actually contacted and were uncertain about the purpose and nature of the follow-up. A great deal of pretesting was consequently involved in arriving at a final version of the telephone protocol for arranging the PEAC appointment. In our view, patients were especially responsive to the idea that they could assist the Center in designing programs of low vision care for visually impaired persons like themselves by providing information about how the Center has and has not successfully served them.

While follow-up visits began in the second project year, final form instruments for their documentation and evaluation were not completed until October 1979. Thus, for purposes of statistical assessment, reliable six month follow-up data are available for a subsample of only 50 cases. Although a sample of that size is not sufficient for drawing strong and stable conclusions about the long-term impact of Center services on the partially sighted, it is adequate to assure us that the follow-up procedures themselves are sound ones, capable of yielding valuable longitudinal data.

As this discussion indicates, the evaluation component has met the objectives established for its next year of operation in the continuation proposal of June 1979. That is to say, with respect to intake procedures, it has accomplished the following tasks: (1) revised and shortened objective sections of the instrument; (2) provided quantitative codes for qualitative clinical information and open-ended patient responses; and (3) produced a complete and consistent codebook for direct and derived intake variables, along with detailed and self-explanatory data entry instructions. Similarly, with respect to follow-up procedures, these tasks were completed: (1) devised a final form version of psychosocial post tests and protocols for their administration; (2) piloted, revised, and incorporated into the follow-up battery the patient satisfaction survey; and (3) produced a codebook and data entry instructions for the follow-up information. Finally, the last area of effort in the past year for the evaluation staff was the development and implementation of a data analysis plan whose results appear in the data summary below.

Plans for the coming year's evaluation component focus on three major kinds of continuation activities. First, a large proportion of patients seen during the past year (about 80 percent) have yet to receive their 6-month follow-up visit. Approximately 300 additional patients to be seen early in FY 81 will also be eligible for 6-month follow-ups during the latter part of FY 81. Finally, there will be a small sample of patients (at least 50) who could receive 12-month follow-up visits employing the same standardized assessment procedures. The aim of the research and evaluation component with respect to these patients is to obtain and analyze longitudinal data representing impact of Center services in relation to demographic, visual, and psychosocial characteristics of the treatment population. We believe that collecting such information will be of substantial value in at least two respects. It is evident to us from reviewing research and treatment literature that there is virtually no descriptive data available about the partially sighted regarding either visual function and related problems or regarding psychosocial problems involved in adaptation to reduced vision. The Center is now in a position to develop such a data base and indicate ways in which functional capabilities and problems, as well as socioemotional responses to them, remain stable or change over time. In addition, while most model projects are required to do some sort of evaluation of service outcomes, virtually no information is collected on long-run individual and social benefits. It would be extremely helpful to know whether an intervention has its intended effect as long as 6 to 12 months later. Do patients continue to use their visual aids, for example, or after the novelty has worn off are the aids shelved? Are independent mobility behaviors learned from Center staff retained in the patient's behavior repertoire 6 to 12 months later? In general, there is no knowledge about the extent to which model services, including this one, achieve the long-term individual and social benefits for which they were designed.

To help remedy this lack, the Center proposes to continue to collect 6-month follow-up information on patients who have already been administered the intake instruments and who have received a low vision evaluation. Further, it will initiate 12-month follow-up visits for all patients who have already received a 6-month follow-up. Outside of minor differences in the telephone protocol arranging the visit, procedures and instruments for the 6- and 12-month follow-ups will be identical. Follow-up data collection activities will in general resemble those employed during the past year. However, on the basis of a careful examination of the cases (N = 55) for whom initial and follow-up information are available, a number of important changes have been made. (1) Factorial analyses of the visual environmental adaptation data (see data summary) yielded strong, consistent, and functionally interpretable groups of problems; consequently, a set of standardized tasks representing major visual environmental adaptation factors has been developed for use in the follow-up visit by the PEAC. Their use will insure that patients' ability to cope with visual environmental problems has been adequately and uniformly assessed. For minor factors and/or for problem areas where behavioral tasks are unfeasible to arrange, self-report items will be substituted. These items will be identical in content to items with highest factor loadings on the intake form. Together with the behavioral tasks, these questions will establish a fairly complete longitudinal evaluation of functional difficulties of partially sighted patients after Center intervention. (2) While psychosocial items remain identical in wording when they are retained, a substantial proportion have been eliminated. Specifically, self-descriptive adjectives have been eliminated because they seem to elicit strong positive response bias and because they seem unlikely to exhibit change (largely because of ceiling effects).

(3) Finally, items in the Patient Satisfaction scale have undergone some revision to reflect recent revisions in the original instrument from which they were adapted. A revised draft of the follow-up form has been developed and is currently being pretested.

Collection of follow-up information will be carried out concurrently with the collection of regular research and evaluation data from all newly entering patients. These procedures will closely resemble those employed during the past year except where an examination of resultant data has suggested that improvements could be made. (1) Information about visual environmental adaptation factors will be gathered as described above for the follow-up visits. That is, a representative set of visual environmental adaptation problems will be explored through performance on behavioral tasks as well as through self-report. Such a procedure will help overcome the weaknesses inherent in self-report data while enabling the low vision assistant directly to observe functional domains in which the patient exhibits capabilities and impairments. (2) Psychosocial items that generated little response variance (adjective self-descriptions) were eliminated. In addition, demographic items that were not found to be associated with visual or psychosocial variables of interest and that were not found useful for treatment design were omitted. (3) Finally, low vision specialists will be asked to supply, in addition to the information already collected, their projections with respect to how patients should be able to cope with visual environmental adaptation factors six months hence, given what they know about current visual status and the aids and services to be provided. This change will permit comparison of patients' performance and self-reported VEAPs before Center intervention with optometrists' judgments about functional abilities and limitations to be expected after Center intervention, and will permit the comparison of both information sources with follow-up results. Moreover, supplying specific and standardized dimensions on which patients' projected performance will be rated is expected to facilitate the collection of quantifiable clinical judgments. A revised intake battery has been drafted and is currently being pretested. With the commencement of the next data year, the research and evaluation staff will monitor intake forms on a weekly basis to insure that missing data problems do not recur.

The last major activity for the Center research and evaluation staff in the next funding period will be the preliminary preparation of detailed guidelines devising and conducting an evaluation of low vision services for the partially sighted. These guidelines will provide concrete operational suggestions, together with clear examples and sample forms. They should enable providers who have minimal research skills to carry out an adequate assessment of their services. This aim is reflective of one of the Center's major goals, which is to facilitate the establishment of low vision centers or services elsewhere in the nation or the world. Continuing research and evaluation tasks will be carried out under the supervision of the evaluation coordinator and the human development specialist, working with the research assistants and the statistical programmer. (New research to be undertaken is discussed in the accompanying competitive extension application.)

IV. DATA SUMMARY

Data collected from patients using the instruments and procedures described in the account of research and evaluation activities (see also Appendixes B, F, and G) are summarized and examined here in order to provide a more complete representation of the Center's target population and the kinds of services they require. For descriptive purposes, information is typically presented in terms of frequencies of responses along dimensions of interest, together with the adjusted percentages in each response category and number of missing cases. For several items, the number of missing cases is sizeable for the following reasons: (1) patients who enrolled for Center services early in the data year (before 1 October) were administrered an intake instrument whose psychosocial measures were still undergoing revision, so fewer standardized observations were obtained on variables in this measurement domain; (2) patients who enrolled very late in the data year, or patients for whom extensive Center services would not have been appropriate, may not have had a second appointment and in that event would not have been administered any items on the second half of the intake instrument. Consequently, sample sizes are systematically smaller for items in the second half than in the first half of the intake interview and for psychosocial measures than for visual or demographic measures. However, comparisons between early- and late-enrolling patients on responses to many of the items administered to both suggest that differences between these subsamples are negligible. For this reason, we have represented response frequencies in terms of adjusted percentages; it is likely that the pattern of relationships among obtained responses would generalize to the missing cases as well. Where data are treated analytically, information is provided about the statistical test and significance level as well as sample size.

Research and evaluation data collected from Center patients are organized below in five sections. The first discusses the incoming population in terms of demographic characteristics. Second, vision-related variables are presented including those assessed by Center optometrists and those assessed by self-report. The third section explores patients' psychosocial status. In the fourth section data representing the Center intervention itself are detailed, while the fifth section provides information collected in six-month follow-up visits to a small patient subsample.

Demographic Information

The dataset for this report was constructed from information obtained during the period May 1979 through March 1980. New patients enrolled for individualized low vision services for this eleven-month period number 560. The distribution of patients' first visits to the Center is shown in Table 1; for comparison

Table 1

FIRST APPOINTMENTS

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
1978			20	18	29	25	34	38	15	37	22	27
1979	39	57	61	48	59	67	56	62	52	62	47	47
1980	40	33	35	52	51							

Reporting Period	Number of Months	Number of new patients	Average Number of New Patients per Month
March 1978 - April 1979	14	470	34
May 1979 - March 1980*	11	560	51
April 1980 - March 1981	2**	103**	55***

*Current Reporting Period

**To Date

***Expected

purposes, similar data have been tabled from the previous reporting period, and projections are given for the forthcoming (proposed) project year. As is evident, the project saw substantially more new patients in the current 11-month than in the previous 14-month reporting period; or, in comparison with the same 11 months last year, this year's new patient total represents about a 45 percent increase.

During the current reporting period there was a decline in new patient enrollments beginning in November, as there had been during the previous reporting period. At that time, we had supposed the drop represented holiday plans supervening on the scheduling of elective health services. However, for the current year the decline in enrollments persisted to the end of the reporting period (March). Consequently we considered the alternative hypothesis that the introduction of the Center's sliding-scale fee schedule tended to depress patient enrollments. We sought to check this hypothesis by consulting the Santa Monica Hospital Medical Center administration; there we learned that enrollment for all types of hospital outpatient services had declined during that period, and that other local hospitals were experiencing similar patient trends. We thus entertained a third hypothesis to the effect that the gasoline shortage and attendant sharp increases in prices in the Los Angeles area had generally served to decrease trips to health care facilities for nonemergency appointments. While we cannot systematically test these hypotheses, we believe that all three proposed sources may have had some impact. That is, it is likely that there is some regular seasonal variation in appointments, and that new cost/effort disincentives (the fee schedule and the fuel crisis) also played a role. In any case, by April-May new enrollments had regained their previous higher rate, and the Center expects to retain a monthly average of new enrollments for the forthcoming year at or above that rate.

The referral sources that generated the new patient load for the current reporting period are tabled below (Table 2). As in the previous period, ophthalmologists provided approximately 60 percent of the referrals, as compared with only about 5 percent from optometrists.

Table 2

PATIENT REFERRAL SOURCES

	Number	Percent
Ophthalmologists	338	62
Optometrists	29	5
Senior Citizen Organizations	1	0
Area Agency on Aging	0	0
Vocational Rehabilitation	12	2
Public Schools	41	8
Organizations for the Visually Impaired (or Other Impairing Conditions)	43	8
Community Referral Services or Other Social Service Organizations	3	1
CPS Outreach and Public Relations	22	4
Word of Mouth	49	9
Other (unspecified)	7	1
TOTAL	545	100

Continuing underreferral by optometrists points up the necessity for increased outreach and dissemination efforts directed toward that professional community carefully underscoring how the Center can assist them by providing to their low vision patients only those specialized services that they themselves do not offer. In contrast, referrals from organizations for the visually or otherwise impaired increased from 4 percent to 8 percent, and word of mouth referrals also nearly doubled in percent. On the other hand, direct self-referrals based on Center outreach and public relations efforts increased only marginally despite a considerable increase in Center outreach and public relations efforts on the local and national levels. We do not interpret these data to mean that outreach and public relations activities are ineffective, but rather to mean that partially sighted patients are unlikely in the main to be self-referred. It is more probable that they will learn about the Center's services, if not from their ophthalmologist, from another individual or from an organization in the community. We believe that increases in referrals from the latter sources in part reflect the Center's increased publicity.

Termination of Center services for patients is represented in the table of dismissals (Table 3), by category. It should be noted that "dismissal" is a

Table 3

PATIENT DISMISSALS

Reason	Number	Percent
Fully Sighted	41	33
Functionally Blind	3	2
Partially Sighted: Nothing We Can Do For Them	8	6
Patient Does Not Desire Further Services	13	10
Patient Deceased	1	1
Patient Out of Area	8	6
Patient Completed Services	52	41
(Returned)	(3)	(2)
TOTAL	126	

relative term and--as the returning patients indicate--ought not be taken to mean that the patient will not have future contact with the Center. Rather, patients who have "completed services" are those for whom no specific appointments have been scheduled; but all such patients are instructed to contact the Center if there is any change in their vision or in the adequacy of prescribed aids that might warrant a return for additional services. About 10 percent of the terminations represent patients who desired no further services despite the fact that continued service was recommended by project staff. In some cases, dissatisfaction with treatment was the presented reason; more commonly, transportation difficulty was the reason cited. Finally, the first three dismissal categories represent cases for whom, on the basis of the low vision evaluation, it was the professional judgment of the staff that none of the Center's services would be appropriate.

Having discussed the current year's patients in terms of rate of enrollment, referrals, and terminations, it is next appropriate to describe the resulting treatment population in terms of demographic characteristics likely to influence need for, or responsiveness to, Center services. As we have noted, the Center aims at supplying comprehensive low vision services to partially sighted persons of all ages. However, in light of the fact that severe visual impairment is associated with advanced age, a specific objective of the Center has been to insure that such services are accessible to partially sighted older adults. Table 4 presents the distribution of project patients among age categories.

The mean age of patients seen was 62.5, and 71 percent were age 60 and over. Consistent with the differential life expectancies for older men and women, the project saw a larger number of female patients than male patients: 53 percent were female and 47 percent were male. With respect to ethnicity, 79 percent of the project patients were white, 12 percent were of Hispanic background and 9 percent were of other ethnic backgrounds. It should be noted that the percent of

Table 4

AGE DISTRIBUTION OF PROJECT PATIENTS

(N=560)

Age Group	Number	Percent
0-20	65	11
21-59	99	18
60-74	144	26
75-97	252	45

minority patients seen during the second year of the project (21 percent) increased from the previous year (14 percent). Given that the project is located in a predominantly white area of Los Angeles, this increase in the number of minority individuals treated suggests that the project's outreach efforts have in fact begun to have greater impact.

Information was also collected about patients' living situations. Living with a spouse was the most common arrangement (41 percent), followed by living alone (32 percent). Roughly a fifth of the sample reported living with relatives other than a spouse, and a small proportion (6 percent) reported living with nonrelatives in private residences. The data also indicate that, relative to their number in the total population, a sizeable proportion of boarding house and nursing home residents (8 percent) are being served by the Center. Typically it is difficult for community services to reach such individuals, even though they may well be in greatest need of them.

Not surprisingly, patients' living arrangements were found to vary in relation to their age and sex. For patients aged 20 and younger, the modal living arrangement is a household with three or more persons (the majority of these individuals are in school and are living with their families). For the working-age group, living with a spouse or living in a larger multiperson household are the most common arrangements. But for the sample aged 60 and older, 84 percent live in one- or two-person households. This information parallels 1977 census updates for older adults and calls attention to the fact that they do not in the main live in extended families or in other contexts in which other individuals are readily available to be called upon for support.

The significant association between sex and type of living situation is illustrated in Table 5. For female patients, living alone is the modal arrangement; in contrast, their male counterparts most typically live with a spouse. This pattern is even more pronounced among older adults, where 54 percent of women as

Table 5

SEX AND LIVING ARRANGEMENT

(N=339)

	Lives Alone	Lives with Spouse	Lives with Others	
Males	27 (8.0%)*	87 (25.7%)	51 (15.0%)	165 (48.7%)
Females	82 (24.2%)	51 (15.0%)	41 (12.1%)	174 (51.3%)
	109 (32.2%)	138 (40.7%)	92 (27.1%)	339

$\chi^2 = 38.01$ df = 2, $p < .001$

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*Percent here and in the remainder of the text is calculated on the basis of the total number of persons responding to the question if that number is less than 560.

compared with 18 percent of men live alone. The sex-based difference in living arrangements reflects the difference in life expectancy between men and women, resulting in a large number of women aged 60 and older who live alone. While maintenance of independent households is very important to this group, coping with the demands of living alone, together with visual impairment in advancing age, requires the fullest possible support from comprehensive community services such as those provided by the Center.

Socioeconomic status data gathered during intake interviews provide information about patients' education, employment, and income level. With respect to education, Table 6 shows that the modal patient had less than a high school education.

Table 6

PATIENTS' EDUCATION

(N=343)

Years of Schooling	Number	Percent
0 through 11	147	43
12	90	26
13 or more	106	31

Mean years of schooling completed by respondents was 11, a figure roughly comparable with recent census data for older population groups in metropolitan areas. However, the proportion who completed a baccalaureate degree and/or have graduate training (29 percent) is higher than would be expected on the basis of census data, even for fully sighted persons. Only 10 percent of the sample reported having received special educational training (other than vocational training) as a partially sighted person. The relatively large number of individuals who attained advanced educational standing is paralleled by the rather large proportion who achieved professional or technical employment status, as evident in Table 7.

Table 7

PATIENTS' OCCUPATION

(N=266)

Occupation*	Number	Percent
Professional/Technical	68	26
Management/Administration	35	13
Sales/Clerical	81	30
Crafts	42	16
Labor/Service	40	15

*Present or most recent past

While the interview question regarding occupation was worded to apply both to individuals currently employed and to those retired, only 8 percent of the sample held full- or part-time jobs at the time of the interview; the overwhelming majority of those not working were retired.

Information about patients' present income is given in Table 8. It is apparent from this table that a substantial number of patients live in households earning less than \$5,000 a year; typically these are Social Security households. Not unexpectedly, significant relationships were obtained between income and both age ($\chi^2 = 29.86$, $p < .001$) and education ($\chi^2 = 19.43$, $p < .001$); higher incomes were found among younger and better-educated respondents. A significant

Table 8

PATIENTS' INCOME

(N=327)

Level	Number	Percent
Below $4,999	123	38
$5,000 - $9,999	102	31
$10,000 and higher	102	31

relationship was also obtained between household size and income ($\chi^2 = 68.98$, $p < .001$), favoring those with a spouse. It should be noted that, as compared with last year's patient sample, this year's sample contains substantially fewer individuals in the upper range of the income distribution (31 versus 50 percent). Again, the change reflects the Center's more vigorous outreach efforts to minority and lower-income groups.

Finally, a number of questions were asked regarding patients' medical histories. Summarized here are responses to health background items of greatest relevance for carrying out low vision services. In regard to general health, only 5 percent reported that they were currently involved in medical services for specific problems of a nonvisual nature, a very small proportion considering the age range of the patients; however, 68 percent said they were taking some sort of medication. On the whole, patients described themselves as faring relatively well: 89 percent judged their general physical health (excluding eye condition) to be average or better than average compared with other people their age. In regard to eye condition, about 20 percent of the sample reported current involvement in medical treatment related to their vision; 36 percent of this group described the treatment as very helpful, while 26 percent found it not helpful at all. It is distressing to note that about 80 percent of the patients were not currently receiving medical or paramedical (e.g., low vision optometric) care for their visual impairment before coming or being sent to the Center; absence of ongoing care of this sort tends to support the Center's conjecture that the partially sighted population comprises an impaired population for whom traditional ophthalmological and optometric care have little to offer.

The last table in this section (Table 9) gives the age range cited by patients as the time during which they believe that their eye disorders first became serious. (Interestingly, 70 percent of the sample reported having had no prior eye disorder, excluding the present problem for which treatment was sought.) While the age ranges given in Table 9 are retrospective and subject to memory errors as well as errors due to lack of accurate information, given their size it is likely that the pattern they represent is fairly accurate. That pattern establishes a relationship between patients' age and duration of visual impairment: Patients in the youngest age group are most likely to have had serious vision problems for

Table 9

REPORTED AGE AT ONSET OF SERIOUS EYE DISORDERS

(N=533)

Age	Number	Percent
Birth	58	11
1 - 20	39	7
21 - 59	108	20
60 - 74	157	30
75 - 97	171	32

the longest time ($\chi^2 = 51.2$, $p < .001$). Specifically, a majority of patients under age 60 indicated that their visual problem had occurred more than six years ago, while a majority of patients in the age group 60 and older had experienced the onset of the problem within the past five years (in fact, 40 percent of them had first experienced a serious vision problem within the past year). These findings are corroborated by responses from an independent sample of about 100 partially sighted persons aged 18 and older (Genensky, et al, 1979)*, and are in part explained by the fact that younger patients manifest congenital and developmental disorders while older patients suffer from degenerative disorders of the eye (see the following section).

In any event, the data seen as a whole present a distressing picture. Mean age of noticed onset of serious disorder is 56 years for Center patients; but mean age at time of application for Center services is 63. Given the historical information reviewed above, it appears that only about one-fifth of these individuals are receiving any medical services at all for their eye disorder while such treatment is rated as only moderately helpful. Moreover, virtually no Center patients have obtained any special services elsewhere designed to maximize successful coping with residual vision even though serious impairment has persisted for a number of years. These data tend to support the Center's belief that the needs of partially sighted persons often go ignored or else fail to receive appropriate treatment. Moreover, it should be clear that the services provided by the Center are not duplicating services that already exist in either the private or public sector.

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*Genensky, S.M., et al, Visual Environmental Adaptation Problems of the Partially Sighted: Final Report, CPS-100-HEW, Center for the Partially Sighted, SMHMC, January 1979.

Vision-Related Variables

The preceding section describes general demographic characteristics of the patient population who made contact with the Center and sought low vision services. This section presents more detailed information about their visual characteristics. Data concerning visual pathologies were obtained for 96 percent (538) of our patients, primarily from reports forwarded by ophthalmologists either in the initial referral or upon later CPS request. Table 10 displays the distribution of visual pathologies; it should be noted that the total number of pathologies exceeds the number of patients, since for 31 percent of the sample multiple pathologies were diagnosed. As is evident in Table 10, macular diseases, cataracts, and choroid and retinal diseases account for more than 60 percent of all clinically diagnosed visual pathologies among Center patients. For the purposes of comparison with clinical diagnoses, patients were asked to tell the primary cause or causes of their visual disorder. A χ^2 test established a significant intersect of first-named pathologies from these two data sources ($\chi^2 = 818$, $p < .001$), suggesting that partially sighted persons are well informed regarding the nature of their visual impairment.

We also examined the distribution of visual pathology (first-cited pathologies only) in relation to age. The results, supplied in Table 11, show that different age groups are differentially likely to exhibit given pathologies. Specifically, the younger and working-age groups show a markedly greater incidence of congenital and developmental visual disorders, while the two older groups exhibit markedly higher rates of macular diseases; the obtained distribution of visual pathology, both overall and by age group, is highly congruent with visual pathology data obtained in the previous reporting year. We believe it provides a stable basis for developing clinical descriptions of the partially

Table 10

DIAGNOSED VISUAL PATHOLOGIES

Visual Pathology	Number	Percent (of Total*)
Corneal and Scleral	17	2
Cataracts	135	18
Uveitis	1	0
Choroid and Retinal Diseases	91	12
Retinitis Pigmentosa	29	4
Diabetic Retinopathy	46	6
Macular Diseases	226	30
Glaucoma	55	7
Optic Neuropathy	27	4
Neurological Disease	0	0
Vascular Occlusion	8	1
Myopia (high)	18	2
Retrolental Fibroplasia (RLF)	8	1
Developmental and Congenital Diseases	30	4
Other Conditions	57	8
Unknown	2	0
TOTAL*	750	

*This total includes multiple pathologies for 31 percent of the patients.

Table 11

AGE AND DIAGNOSED VISUAL PATHOLOGY

	Cataracts	Choroid and Retinal Diseases and Retinitis Pigmentosa	Diabetic Retinopathy	Macular Diseases	Glaucoma	Other[a]	
0-20 years	5 (0.9%)	11 (2.1%)	0 (0.0%)	2 (0.4%)	4 (0.8%)	38 (7.2%)	60 (11.3%)
21-59 years	8 (1.5%)	19 (3.6%)	14 (2.7%)	15 (2.8%)	2 (0.4%)	32 (6.1%)	90 (17.0%)
60-74 years	10 (1.9%)	20 (3.8%)	20 (3.8%)	52 (9.9%)	8 (1.5%)	26 (4.9%)	136 (25.8%)
75 years and older	31 (5.9%)	35 (6.6%)	6 (1.1%)	123 (23.3%)	24 (4.6%)	23 (4.4%)	242 (45.9%)
	54 (10.2%)	85 (16.1%)	40 (7.6%)	192 (36.4%)	38 (7.2%)	119 (22.5%)	528 (100.0%)

$\chi^2 = 152.34$ df = 15 $p < .0001$

[a] Includes corneal and scleral disorders, uveitis, optic neuropathy, acquired neurological diseases, vascular occlusions, high myopia, retrolental fibroplasia, congenital and developmental disorders (coloboma, microphthalmia, amblyopia, retinoblastoma, and other conditions).

sighted population and for predicting the pathology characteristics of future patient samples.

Visual acuity data are collected for all Center patients in the course of the low vision evaluation. Acuity data are provided in Table 12, where, for summary purposes, they have been grouped into the following visual categories.

- Persons are considered fully sighted if their best corrected vision (with ordinary spectacles or contact lenses) in their better eye is better than 20/70.*
- Persons are classified as partially sighted but not legally blind if their best corrected vision in their better eye lies in the range from 20/70 to, but not including, 20/200.
- Persons are partially sighted and legally blind if their best corrected vision in either eye ranges from 20/200 to, but not including, functional blindness.
- Persons are classified functionally blind if they are either totally blind or if, in the better eye, there is only light perception or light projection including "counts fingers."

As Table 12 indicates, over 10 percent of the patient population were classified as fully sighted when they sought Center services. Among these 59 individuals, 41 were terminated as cases for whom specialized low vision services were inappropriate; the remainder have received such services either because of extremely restricted visual fields or because their visual condition was rapidly deteriorating. Among the 9 individuals originally classified as functionally blind, 1 was found to be misclassified and was actually legally but not functionally blind; 1 became a patient nonetheless in order to receive orientation and mobility training as well as psychological counseling; and the remaining 7 individuals were terminated as ones for whom no Center services were likely to be appropriate.

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*The reader should note that these definitions were made for research purposes and thus are not identical to those that are commonly used in clinical practice in that they do not specify membership in the defined group due to field restriction.

Table 12

MEASURED VISUAL ACUITY

Visual Acuity Category	Number	Percent
Fully Sighted	59	11
Partially Sighted/Not Legally Blind	168	30
Legally Blind/Not Functionally Blind	321	58
Functionally Blind	9	2
Total	557	

It should be emphasized that visual status categories were defined on the basis of acuity measures for Center purposes even though it is necessary and desirable to take field restrictions into account along with acuity. As the description of low vision services indicates, a variety of field measures are collected from patients. However, to date it has been difficult to use them in research and evaluation because they are not readily converted to summary quantitative variables. Procedures for field quantification and summarization have now been developed and will be used in the coming project year to obtain information about field restrictions in the partially sighted.

In order to compare the Center's treatment population with the national visually impaired population, we relied on Model Reporting Area data (1970). This comparison suggested, first of all, that the Center continues to enroll a disproportionately large number of legally (but not functionally) blind patients; those who are partially sighted but not legally blind are seriously underrepresented. MRA data indicate that, excluding those who are functionally blind, the ratio of those who are partially sighted only to those who are legally blind in the visually impaired population should be about four to one. While the distribution of Center patients in acuity categories is closer to MRA patterns this year than last year, the discrepancy is still very large. The discrepancy is probably attributable to patient referral sources. As the previous section points out, most referrals come from ophthalmologists, practitioners who are (in comparison with other providers who treat the partially sighted) likely to be seeing the most severely impaired within the visually handicapped population. Thus in order to achieve a distribution of patients whose measured acuities are representative of the less severe as well as the more severe range of visual impairment, it is requisite to carry out more effective outreach and dissemination efforts among practitioners such as optometrists who perhaps are likely to be in contact with individuals who are partially sighted but not legally blind.

We also compared the Center's treatment population with MRA data linking age and visual impairment. On the basis of that data we had expected to find a relationship between age group and severity of visual loss, with older patients exhibiting greater impairment. An examination of the distribution of adult patients between the two visual acuity categories of interest (Table 13) tended to confirm that assumption. (Because so few Center patients are age 20 or younger, that age group had to be omitted for analysis purposes.) We had supposed that this relationship was explained by visual pathology distribution, since in the previous year's data, type of pathology had been significantly associated with visual acuity category: that is, pathologies associated with advanced age (degenerative eye disorders) were also associated with more severe impairment in our patient population. However, in the current dataset there is no statistical relationship between type of pathology and severity of impairment; rather, pathologies are evenly distributed between the two visual acuity categories of interest, legal blindness and partial sightedness only.

Table 13

AGE AND VISUAL ACUITY

(N=435)

Age Group	Partially Sighted, Not Legally Blind	Partially Sighted, Legally Blind	
21 - 59 years	31 (7.13%)	57 (13.10%)	88 (20.23%)
60 - 74 years	51 (11.72%)	75 (17.24%)	126 (28.97%)
75 and older	64 (14.71%)	157 (36.09%)	221 (50.80%)
	146 (33.56%)	289 (66.44%)	

$\chi^2 = 4.9$, df = 2, $p < .09$

Psychosocial and Functional Status

A major goal of the Center's evaluation research was to describe patients' situations from a social-psychological viewpoint and to identify characteristics that explain variation in psychosocial status. As described earlier, information was collected about several facets of patients' psychological well-being, including mood and morale (10 items, Appendix B2 (7), self-description (32 items, Appendix B3 (4), and satisfaction with multiple life domains (15 items, Appendix B3 (5 and 6). This section presents descriptive information concerning patients' psychosocial functioning and also presents the results of bivariate and multivariate analyses linking psychosocial outcomes to two major classes of predictor variables.

Summary indices of patients' psychosocial status were created by reversing negatively-keyed items and summing appropriate sets of items. The intercorrelations among these indices ranged from .41 to .59, suggesting that they measure related but nonidentical constructs. Table 14 provides means and standard deviations on the summary psychosocial measures.

Table 14

MEANS AND STANDARD DEVIATIONS OF THE
MEASURES OF PSYCHOSOCIAL FUNCTIONING

Measure	Mean	Standard Deviation	N
Mood and Morale	36.15*	7.48	344
Self-Description	83.75**	8.57	159
Satisfaction with Life	32.57***	5.50	199

*Range = 10 to 50. A higher score represents more positive mood and morale.

**Range = 32 to 96. A higher score represents a more positive self-description.

***Range = 15 to 45. A higher score represents higher overall life satisfaction.

It is evident from this table that, as a group, patients tended to characterize themselves and their lives in fairly positive terms. (Positivity bias in self-report measures of domains of well-being, a frequent research finding, is fully discussed in Campbell, Converse and Rodgers, 1976.) However, sufficient variation remains (as subsequent analyses demonstrate) to permit use of these measures for investigation of the psychosocial status of visually impaired patients.

While examination of overall means is useful, it is also illustrative to examine responses to individual items within each index. For example, while most of the individual self-description items are positively skewed, there is somewhat greater variation for a subset of the items, including items which tap an affect or mood dimension (happy, sad, content, lonely) and items which tap an anxiety or irritability dimension (nervous, easily upset, irritable). Roughly 50 percent of the patients said that these negative adjectives described them very well or moderately well, and a similar proportion indicated that these positive adjectives described them not at all or moderately well (as opposed to very well). The extent to which these figures represent a departure from positive self-description is underscored by the fact that, averaging across the set of 32 self-descriptors, the most positive response alternative was selected by 70 percent of the patients. Thus while most patients described themselves in generally positive terms, a substantial number also used self-descriptive terms reflective of negative affect and anxiety. The pattern of responses to items which constitute the mood and morale scale can be similarly described. For example, one-third of the patients characterized themselves as anxious most or all of the time in the preceding month. A large proportion (55 percent) likewise reported that they had been under stress or pressure at least some of the time during the past month, and 55 percent also described themselves as feeling downhearted or blue at least some of the time during that period. While acknowledging occasional to frequent feelings of anxiety and depression, most patients (84 percent) also felt that they usually had control over their behaviors, thoughts, and feelings. Similarly, the majority (77 percent) characterized themselves as generally emotionally stable and sure of themselves. Thus, patients reported experiencing problematic emotions and stresses but generally regarded themselves as able to manage these problems. The confidence with which patients described their coping capabilities may, in part, reflect a self-presentation bias but may also reflect the fact that these questions asked patients to report very generically about their psychosocial functioning. However, the success of patients' coping efforts may vary across different areas of their lives.

Examination of satisfaction ratings for specific life domains provides some indication that this is the case. Table 15 summarizes patient ratings of importance and satisfaction for 15 different categories of life experience.

Most patients reported that they were very satisfied with their material comforts (61 percent), family relationships (70 percent), and close friendships (66 percent). In contrast, relatively few were satisfied with their work (34 percent), health and personal safety (34 percent), and enjoyment of reading, music, and spectator sports (30 percent), even though all of these life domains were judged to be very important by at least two-thirds of the sample. It is significant that these domains that are simultaneously most important and least satisfying to partially sighted persons are precisely the domains in which the comprehensive individualized low vision services provided by the Center may be expected to be most helpful.

As mentioned earlier, a major research goal of the project was to identify characteristics that explain variation in patients' psychosocial status. Two sets of possible predictor variables were examined in these analyses--demographic characteristics and vision-related characteristics. The general strategy of investigation called for initial bivariate analyses to examine the relationships between individual predictor variables and three psychological outcomes (mood and morale, self-description, and life satisfaction). The second stage of analysis called for multivariate analyses to examine the relative predictive power of the independent variables in combination. Of particular interest was the relative predictive power of the set of vision-related characteristics as compared with the set of demographic characteristics. The bivariate analyses are summarized first, followed by the multivariate analyses.

Table 15

PATIENT RATINGS OF IMPORTANCE AND SATISFACTION IN 15 SPECIFIC LIFE DOMAINS

Domain	Percent "Very Important"[*]	Percent "Very Satisfied"[*]	Percent Discrepancy[*]
1. Physical and material well-being			
A. Material comforts	67	61	6
B. Health and personal safety	92	34	58
C. Getting effective treatment for health problems	91	52	39
2. Relations with other people			
D. Relations with your children, parents, brothers, sisters, and other relatives	85	70	15
E. Close relationship with a husband/wife or a relationship like that	63	61	2
F. Close friends	79	66	13
3. Social, community, and civic activities			
G. Helping and encouraging people other than relatives or close friends	58	49	9
H. Participation in activities relating to government and public affairs	30	27	3
4. Personal development and fulfillment			
I. Learning	53	27	26
J. Understanding yourself and knowing your assets and limitations	78	47	31
K. Work in a job or at home	66	34	32
L. Expressing yourself in a creative manner	51	27	24
5. Recreation			
M. Socializing. Meeting other people, doing things with them	50	41	9
N. Reading, listening to music, or observing sporting events or entertainment	82	30	52
O. Participation in active recreation	44	32	12

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[*] All ratings were made on a 3-point scale (Very Important, Somewhat Important, Not Very Important/Very Satisfied, Somewhat Satisfied, Not Very Satisfied). Patients gave satisfaction ratings for those items which were judged to be very or somewhat important. The number of cases for the ratings varied since not all patients answered every item. The average number of cases per rating is 181.

One-way weighted-means analyses of variance were performed to examine the bivariate relationships. The demographic characteristics treated as independent variables in these analyses were: age, income, education, sex, and living arrangement. (Categorical variables with three levels were constructed to represent age and education.) Income, education, and living arrangement were not significantly related to any of the psychosocial variables. Age and gender, in contrast, were significantly related to two measures. The results of these analyses are summarized in Table 16 and Table 17.

Table 16

PSYCHOSOCIAL OUTCOMES AS A FUNCTION OF AGE

Psychosocial Outcome	21-59 (Working-Age)	60-74 (Young-Old)	75-97 (Old-Old)	F
Mood and Morale	35.13 (69)	34.54 (97)	37.45 (171)	5.53 df=2,334*
Self-Description	83.21 (28)	82.96 (54)	84.66 (74)	.69 df=2,153
Life Satisfaction	31.35 (37)	32.33 (62)	33.24 (97)	1.69 df=2,193

*$p < .05$

Entries are group means. A higher score represents a more positive outcome. The figures in parentheses are the number of individuals in each group. The youngest group (age 0-20) was excluded from the analyses due to insufficient sample size.

The data in this table indicate that the oldest patients reported the most positive mood and morale. T-tests revealed that the means for the working-age and young-old patients did not differ significantly, whereas the mean for the old-old patients differed significantly from that of both the working-age

($t = 2.18$, df = 238, $p < .05$) and young-old patients ($t = 3.03$, df = 266, $p < .01$). This result concurs with findings from previous studies of psychosocial well-being, and is frequently attributed to age differences in expectations, with older adults presumably having more modest expectations. It might be noted that the patterning of means for the self-description and life satisfaction measures reflects a similar age trend, although these differences did not reach statistical significance.

Table 17

PSYCHOSOCIAL OUTCOMES AS A FUNCTION OF SEX

Psychosocial Outcome	Sex		F
	Male	Female	
Mood and Morale	37.26 (161)	35.18 (183)	6.73 df=1,342**
Self-Description	83.45 (76)	84.02 (83)	.18 df=1,157
Life Satisfaction	33.37 (95)	31.84 (104)	3.89 df=1,197*

*$p < .05$ **$p < .01$

Entries are group means. A higher score represents a more positive outcome. The figures in parentheses represent the number of individuals in each group.

Two of the three psychosocial measures, in contrast, were significantly related to sex of the patients. These data are consistent with a great deal of psychological research that predicts lower outcomes for women than for men. Analyses discussed later suggest that partial sightedness for women, as compared with men, is associated with lower performance on indices of functional status as well as psychosocial status.

A second set of analyses of variance was conducted to examine relationships between visual status characteristics and psychological well-being. The vision-related characteristics treated as independent variables in those analyses were of two types--objective parameters of visual function and subjective assessments of visual impairment. The objective characteristics explored were the patients' best corrected acuity, visual pathology, and the duration of the visual impairment. A categorical variable, constructed to represent visual acuity, distinguished three groups: the fully sighted; the partially sighted who are not legally blind; and the partially sighted who are legally blind. (The functionally blind were excluded from analysis because their number in the patient sample was so small.) Pathology type was represented in six categories: cataract, choroid and retinal, diabetic retinopathy, macular diseases, glaucoma, and other. Duration of impairment was defined as the difference between the patient's current age and age at onset of serious visual impairment. Duration scores were trichotomized for the patient sample, yielding a categorical variable with three groups: patients whose vision problem had occurred in the past year; patients whose vision problem had existed for two to six years; and patients whose vision problem had existed for longer than six years. (Field restriction was omitted from analysis because it is not yet a quantifiable variable.) The self-report assessments of visual impairment were obtained from questions which asked patients to judge whether their vision would change or remain the same in the future, to evaluate the extent to which their visual problems made daily living difficult, and to evaluate how much their visual problems affected their overall quality of life (items 3-5, Appendix B2 (8). Categorical variables with three levels were constructed from each of these items.

Analyses of variance yielded significant effects only for subjective assessments of the impact of low vision on daily living and on overall quality of life. These results are summarized in Table 18 and Table 19.

Table 18

PSYCHOSOCIAL OUTCOMES AS A FUNCTION OF PERCEIVED IMPACT OF VISUAL IMPAIRMENT ON DAILY LIVING

Psychosocial Outcome	Perceived Impact: Makes Lots of Problems	Perceived Impact: Makes Some Problems	Perceived Impact: Makes No Problems	F
Mood and Morale	32.60 (72)	36.21 (162)	38.34 (108)	13.67 df=2,339**
Self-Description	80.36 (36)	84.04 (80)	85.90 (40)	4.26 df=2,153*
Life Satisfaction	30.74 (45)	32.24 (97)	34.88 (50)	7.32 df=2,189**

$^{*}p < .01$ $^{**}p < .001$

Entries are group means. A higher score represents a more positive outcome. The figures in parentheses represent the number of individuals in each group.

The data in Table 18 indicate that psychosocial outcome is positively associated with perceiving the visual problem to have minimal impact on daily living. This relationship is consistent for all three measures of psychosocial outcome.

The data in Table 19 parallel those in Table 18: less negative evaluations of the impact of visual impairment are associated with better psychosocial outcome. It should be emphasized that this relationship does not appear to reflect a simple "positivity" bias on the part of some patients. If these data simply reflected positivity bias, then the distributions of the psychosocial responses and the subjective assessments would both be positively skewed. This is not the case, however. While the psychosocial responses are positively skewed, the subjective assessments are normally distributed. It seems most appropriate, therefore, to view this finding as consistent with a growing body of psychological research that indicates that it is not events per se but rather subjective evaluations of events that mediate psychological outcomes.

Table 19

PSYCHOSOCIAL OUTCOMES AS A FUNCTION OF PERCEIVED IMPACT OF VISUAL IMPAIRMENT ON QUALITY OF LIFE

	Perceived Impact			
Psychosocial Outcome	Makes it Very Difficult	Interferes Somewhat	Little or No Effect	F
Mood and Morale	30.47	36.26	40.42	62.88 df=2,335**
	(91)	(125)	(122)	
Self-Description	79.02	84.09	87.52	14.36 df=2,152**
	(48)	(55)	(52)	
Life Satisfaction	30.35	32.43	34.91	11.64 df=2,187**
	(61)	(66)	(63)	

$^{**}p < .001$

Entries are group means. A higher score represents a more positive outcome. The figures in parentheses represent the number of individuals in each group.

While we formed this hypotheses tentatively on the basis of these bivariate analyses, we considered it important to extend the investigation to include multivariate analyses in order to assess the combined explanatory power of the independent variables and to examine the unique contribution of particular variables after controlling for the effects of other variables. A series of multiple regressions was conducted according to the following three-stage analysis strategy. First, each of the three psychosocial outcomes was regressed on the set of demographic characteristics discussed earlier. Next, the psychosocial outcomes were each regressed on the set of vision-related characteristics described above.

Finally, each psychosocial outcome was regressed on the combined set of demographic and vision-related characteristics. (Visual pathology was excluded from the regression analyses since its representation in dummy variable form would require five variables and, when combined with the other variables to be included in the regressions, would result in an inappropriate ratio of number of variables to number of cases.) Whenever possible, continuous forms of the independent variables were used in these analyses. This analytic approach permits assessment of the relative predictive power of the demographic and visual status characteristics and also permits assessment of their combined predictive power. The regression analyses are summarized in Tables 20, 21, and 22.

The results of these analyses are strikingly consistent and corroborate the results of the bivariate analyses. First, the demographic characteristics, as a set, account for very little (6 to 7 percent) of the variance in any of the psychosocial outcomes. Among the demographic characteristics, those that make a unique contribution to the explained variance (as established by the significance of *t* values) are generally those identified as having significant effects at the bivariate level, that is age and sex. An exception to this pattern occurs with the self-description measure. The only demographic characteristic that makes a unique contribution to self-description is education, where higher education is associated with a more positive self-description. These results may perhaps be interpreted to mean that better-educated individuals are more discriminating in their use of adjective self-descriptors. However, results described later lend support to the alternative hypothesis that education does impact in interesting ways on well-being for partially sighted persons.

While demographic characteristics as a group account for little of the variance in psychosocial adjustment, vision-related characteristics account for a greater proportion of the variance, ranging from 11 percent to 27 percent

Table 20

PREDICTION OF MOOD AND MORALE BY SET OF DEMOGRAPHIC CHARACTERISTICS AND SET OF VISION-RELATED CHARACTERISTICS
(N=214)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	t df=212
Demographic Characteristics				
Age	0.09		0.08	2.69^{**}
Income				
Middle Income	0.51		0.55	-0.47
Upper Income	1.23		0.68	0.52
Education	0.01		0.13	1.00
Sex (Female)	-2.12		-2.28	-2.44^{*}
Living Arrangement				
Living with Spouse	-2.91		-2.27	-1.93
Living with Others	1.05		2.03	1.47
Vision-Related Characteristics				
Acuity		.003	.003	1.07
Duration of Visual Impairment		-0.03	-0.02	-0.36
Perceived Impact on Daily Living				
Makes Some Problems		-0.17	-0.24	-0.18
Makes No Problems		0.66	0.10	0.07
Perceived Impact on Quality of Life				
Interferes Somewhat		5.64	5.79	4.50^{***}
Has No Effect		9.00	9.56	7.24^{***}
Explained Variance	.07	.27	.34	
(multiple R^2)	$F_{(7,206)}=2.07^{*}$	$F_{(6,207)}=12.71^{**}$	$F_{(13,200)}=7.78^{**}$	

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

Table 21

PREDICTION OF SELF-DESCRIPTION BY SET OF DEMOGRAPHIC CHARACTERISTICS AND SET OF VISION-RELATED CHARACTERISTICS
(N=137)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	*t* *df*=135
Demographic Characteristics				
Age	.073		.068	1.48
Income				
Middle Income	.793		-0.378	-0.19
Upper Income	.764		.830	.39
Education	.602		.789	3.56^{***}
Sex (Female)	.940		.391	.26
Living Arrangement				
Living with Spouse	-1.03		-0.568	-0.28
Living with Others	.284		2.07	.92
Vision-Related Characteristics				
Acuity		.007	.007	1.61
Duration of Visual Impairment		.004	-0.023	-0.37
Perceived Impact on Daily Living				
Makes Some Problems		-0.746	-0.637	-0.31
Makes No Problems		-0.352	.187	.08
Perceived Impact on Quality of Life				
Interferes Somewhat		5.54	5.63	2.82^{**}
Has No Effect		8.06	9.10	4.22^{***}
Explained Variance	.07	.16	.25	
(multiple R^2)	$F_{(7,129)}=1.34$ (n.s.)	$F_{(6,130)}=4.05^{**}$	$F_{(13,123)}=3.212^{**}$	

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

Table 22

PREDICTION OF LIFE SATISFACTION BY SET OF DEMOGRAPHIC CHARACTERISTICS AND SET OF VISION-RELATED CHARACTERISTICS

(N=167)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	*t* *df*=165
Demographic Characteristics				
Age	0.06		0.06	2.06*
Income				
Middle Income	0.79		0.41	0.36
Upper Income	1.51		1.52	1.23
Education	-0.03		0.04	0.37
Sex (Female)	-1.02		-1.37	-1.60
Living Arrangement				
Living with Spouse	0.78		0.85	0.76
Living with Others	1.75		2.30	1.80
Vision-Related Characteristics				
Acuity		0.003	0.003	1.33
Duration of Visual Impairment		-0.03	-0.02	-0.48
Perceived Impact on Daily Living				
Makes Some Problems		-0.97	-1.25	-1.01
Makes No Problems		1.51	1.33	0.96
Perceived Impact on Quality of Life				
Interferes Somewhat		2.08	2.55	2.17*
Has No Effect		3.94	4.37	3.55**
Explained Variance	0.06	0.14	0.21	
(multiple R^2)	$F_{(7,160)}=1.40$ (n.s.)	$F_{(6,161)}=4.51$**	$F_{(13,154)}=3.14$**	

*p <.05 **p <.01 ***p <.001

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

of the variance in the three psychosocial outcomes. What is most notable, however, is that among the set of vision-related characteristics, the objective parameters are only weakly related to psychological outcomes. Consistent with the results of the bivariate analyses, it is subjective judgments about visual impairment that prove to be most important for psychosocial status, particularly judgments about the impact of the vision problem on overall quality of life. The corroboration of this pattern at a multivariate level strengthens our confidence in its interpretation.

When the set of demographic characteristics is combined with the set of vision-related characteristics, they account for one-third of the variance in self-description and 21 percent of the variance in life satisfaction. Examination of the increment in R^2 achieved by combining these two sets of variables suggests that patients' psychosocial adjustment is mediated primarily by visual status characteristics rather than demographic characteristics. Given that the most important visual status predictors are subjective assessments of the impact of visual impairment, an alternative way to state this finding is that the effect of patients' personal characteristics is largely expressed through their judgments about the consequences of visual impairment.

The implications of these results for the services provided by the Center are generally encouraging. The very weak relationships obtained between demographic variables and psychological well-being among visually impaired individuals are reassuring since such variables are not readily amenable to change. In contrast, the strong relationship obtained between psychological well-being and subjective judgments about visual impairment define an arena of intervention for which the services provided by the Center are ideally suited. On the one hand, low vision services provided by the optometrists and low vision assistants, as well as services provided by the orientation and mobility instructor and the community resource specialist, should serve to reduce the negative impact of visual impairment per se on patients' lives. At the same time psychological services are available to help patients directly examine their interpretations of and attitudes toward their vision, and to help them make positive behavioral changes. The broad complement of services provided by the Center, then, appears to be particularly well-suited to helping partially sighted individuals change those factors which our research has indicated are most closely linked to psychological well-being.

In addition to psychosocial status, functional status was chosen as an important focus of investigation in the Center patient population. Functional capabilities and limitations were assessed using a series of questions tapping visual environmental adaptation problems (VEAPs). These 30 questions (listed under item 23 in the intake instrument, Appendix B2) were drawn from a much larger pool of questions administered in a previous research undertaking aimed at identifying the visual environmental adaptation problems of partially sighted adults.* Questions were selected for inclusion if they represented activities that a substantial proportion of partially sighted adults either do or would like to do, and that often pose moderate to severe vision-based difficulties. Values of responses to questions ranged from 1 to 3, indicating that the patient reported having no difficulty carrying out the activity, having visual difficulties carrying out the activity, or not attempting the activity at all. Data from these questions were submitted to factorial analysis, and eight orthagonal factors emerged to account for about 60 percent of the total response variance. Table 23 below presents the set of 30 VEAP questions administered in the Center interview along with their original item code numbers (in parentheses), so that

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*Genensky, S.M., et al, Visual Environmental Adaptation Problems of the Partially Sighted: Final Report, CPS-100-HEW, Center for the Partially Sighted, SMHMC, January 1979.

Table 23

VISUAL ENVIRONMENTAL ADAPTATION FACTORS

Visual Environmental Adaptation Items (original item code number)	8 Factors	Factor Loadings**	Frequencies of Responses Per Item*		
			No Problem	Visual Problem	Doesn't Do
Grooming (2101)	1 (Independent Living Skills)	.67	216	225	27
Distinguishing denominations of money (1120)		.64	239	200	28
Distinguishing traffic signals (3303)		.62	177	277	28
Seeing oncoming traffic (3302)		.57	262	193	27
Using telephone (1121)		.56	253	192	24
Reading headlines, Large/Standard print (1101)		.47	123	326	34
Writing checks or letters (1110)		.40	147	230	96
Watching TV (6201)		.37	158	315	20
Locating office in an unfamiliar building (3230)	2 (General Orientation)	.84	128	195	88
Locating restroom in an unfamiliar building (3331)		.84	163	176	74
Using elevators (3220)		.80	198	146	98
Shopping in general (2110)		.46	99	231	147
Going upstairs (3210)	3 (General Mobility)	.83	268	131	27
Going downstairs (3211)		.82	229	171	26
Walking about alone (3301)		.46	254	179	50
Going from bright to dim area (4401)	4 (Illumination Problems)	.80	147	336	2
Going from dim to bright area (4402)		.80	178	307	2
Glare or bright lights (4404)		.60	109	378	4
Seeing at night (4403)		.46	223	228	23
Preparing foods (2230)	5 (Household Tasks)	.75	157	162	160
Household chores--sweeping, vacuuming (2220)		.73	193	101	133
Taking medication, using a thermometer (1102)		.50	130	209	132
Finding right bus stop (3341)	6 (Bus Travel)	.92	101	101	265
Determining number of oncoming bus (3340)		.91	58	137	266
Being a spectator at sporting events, movies (6305)	7 (Recreational Activities)	.74	74	148	254
Participation in physical activities (6320)		.56	91	54	273
Hobbies (6210)		.55	86	119	273
Recognizing familiar faces (5310)	8 (Social Perception)	.72	50	414	29
Reading facial expressions (5101)		.52	127	183	14
Meeting new people/developing relationships (5420)		.49	84	3	1

*Average N per item = 447

**N for factor analysis (number responding to all items) = 258 they can be linked both to exact wording in the intake instrument and to their counterparts in the earlier VEAP research report. Items are presented in groups representing the factors on which they have the highest loading, and are ordered within groups from highest to lowest factor loading. Frequencies of response are also tabled to indicate numbers of individuals who reported varying problem levels for each activity.

Patterns of items generated by the factor analysis are of considerable interest from the standpoint of both research and intervention, because they are basically interpretable for functional domains. That is, it would seem that the capabilities and limitations of partially sighted persons are better organized and understood in terms of areas of activity (e.g., locating rooms in unfamiliar buildings vs. doing household chores) than in terms of visually common characteristics of activities (e.g., near vision tasks vs. distant vision tasks).

- The first factor, termed independent living skills, includes a heterogeneity of items that are routinely involved in the conduct of daily life. Among them the "grooming" item (where interview probes include "combing your hair," "cutting nails," "applying makeup or shaving") loaded highest, while coping with money, traffic, and the telephone also contributed importantly.

- The second factor we have termed general orientation, because although mobility skills are presupposed in the questions, their emphasis is locational. For example, a probe for the shopping question is "locating items."

- Similarly, we have designated the third factor general mobility because, while orientation skills are presupposed in the questions, their emphasis is on moving about.

- Illumination problems encountered in everyday environments constitute the fourth factor, where changes in illumination produce the highest factor loadings. Unlike the others, this factor is definable in terms of visually relevant properties of behavioral contexts rather than functional properties.

- The fifth factor is designated household tasks because it comprises a variety of items, all of which refer to activities carried out at home. Unlike the independent living skills items, these items seem to refer to activities that could in principle be delegated without entailing major loss of independence.

- Factor six is here termed bus travel, and is constituted by two highly-loading items. It should be noted that public transportation is of considerable importance to partially sighted persons, the great majority of whom do not drive. In the metropolitan Los Angeles area, from which the Center sample is drawn, intracity distances are so great as to render travel by taxi cost-prohibitive, and there are no commuter train or subway systems. Consequently inquiries here were limited to bus travel. (While we suspect that transportation would figure importantly in the functional problems of partially sighted persons in most cities, we are unable to estimate the extent to which bus travel problems are representative of the larger class of public transportation problems.)

- Factor seven includes a range of recreational activities, from those that involve physical participation (e.g., jogging or dancing) to less active pursuits (e.g., crocheting or cardplaying) to attendance at spectator events (e.g., movies, or sports).

- Finally, factor eight is constituted by problems of social perception, including meeting new people, recognizing familiar faces, and decoding facial expressions.

In order to describe functional capabilities and limitations as well as to identify characteristics that explain variation in functional status, eight factor scores plus a summary VEAP score were created for each patient. Specifically, eight scoring coefficients were generated for each item, reflecting its contribution to each factor. These coefficients were used to weight individual responses, and weighted responses were summed within case for each factor to represent the individual's functional status in the corresponding activity domain. Then the eight factor scores for each patient were summed to yield a general index of functional status across activity domains.

These nine variables, then, were taken as variables representing functional status of partially sighted Center patients. Having derived such indicators, we planned to treat them as outcome variables employing an analytic strategy paralleling that used for the investigation of psychosocial status. However, it was necessary first to examine the relationship between the two types of outcomes to determine whether they did in fact constitute two distinct classes of measures.

For this purpose, correlations between psychosocial and functional variables (see Table 24) were examined. It should be recalled that for the first two psychosocial variables, higher numbers indicate greater well-being while for the third, the opposite holds; for VEAP variables, higher numbers uniformly indicate greater difficulty. To the extent that these two outcomes are equivalent (i.e., that positive well-being is virtually the same as absence of difficulty), we would expect strong inverse relationships between the first two psychosocial measures and VEAP variables,

Table 24

CORRELATIONS BETWEEN PSYCHOSOCIAL
AND FUNCTIONAL VARIABLES

Psychosocial Variables	Independent Living Skills 1	General Orientation 2	General Mobility 3	Illumination Problems 4	Household Tasks 5	Bus Travel 6	Recreational Activities 7	Social Perception 8	VEAP Summary Variable
Mood and Morale (N = 193)*	-.10	-.03	-.06	-.11	-.15	-.12	-.12	-.002	-.23
Self-Description (N = 90)*	-.02	-.18	-.18	-.18	-.16	-.13	-.25	-.02	-.35
Life Satisfaction (N = 258)*	.15	-.06	-.01	-.05	.15	-.02	.04	-.03	.06

*Correlations have different Ns, reflecting the circumstance that not all patients answered all items in every scale. For analysis purposes, only scale-complete cases are used.

and strong direct relationships among the others. As Table 24 reveals, direction of relationships obtained suggests that psychosocial and functional well-being are at least contingently associated. Significant associations ($p < .001$) were obtained between the summary VEAP variable and two psychosocial measures (self-description, and mood and morale); in addition, positive self-description is significantly related ($p < .05$) to functional capability in recreational activities (a result mediated, as results below imply, by education). In any event, obtained *r* values are generally low and insignificant, and even those that attain statistical significance are not high enough to suggest equivalence. Consequently, psychosocial status and functional status are treated as empirically distinct outcome areas.

Functional status variables were then examined in order to identify patient characteristics that would significantly influence this outcome area. For this purpose, potential explanatory variables of two types were investigated, representing demographic characteristics and vision-related characteristics, respectively. As before, independent and dependent variables were initially examined in a series of bivariate relationships; subsequently, multivariate techniques were employed to determine relative effects of the entire set of independent variables (demographic and vision-related characteristics, considered separately and together) on the several dependent measures of functional status. (For a more precise account of this procedure, see the description in preceding parts of this section related to the analysis of psychosocial variables.) First one-way weighted-means analyses of variance were used to study effects of independent demographic factors (age, income, education, sex and living arrangement) on dependent measures of functional status.

These analyses established that functional outcomes, like psychosocial outcomes, are more strongly influenced by age and sex of patient than by any other demographic characteristics. Analyses of variance results for these demographic characteristics are presented in Tables 25 and 26. (In these and remaining tables,

Table 25

VEAP FACTOR SCORES *t* AS A FUNCTION OF AGE

Factor	Age Group 21-59 (Working-Age)	 60-74 (Young-Old)	 75-97 (Old-Old)	F
1 (Independent Living Skills)	-.29	.16	.03	3.08^{*}
4 (Illumination Problems)	-.37	-.04	.38	11.87^{***}
VEAP Summary Variable	51.5	56.3	56.2	5.55^{**}
N	46	81	112	df=2,236

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

t higher scores indicate greater difficulty.

absolute values of means are relatively uninformative because they are derived from standardized factor scoring coefficients; however, direction and magnitude of differences between group means is informative. It should be remembered that higher scores indicate greater difficulty.) Data in these tables are instructively compared with data presented in Tables 16 and 17. Age group had a significant effect on the VEAP summary variable as well as on Factors 1 (Independent Living Skills) and 4 (Illumination Problems). While differences in functional status uniformly favored working-age adults, there was not a consistent age trend. That is, while the "young-old" adults had less difficulty with illumination problems, than their older counterparts, the "old-old" adults had less difficulty with daily independent living problems. In consequence, the VEAP summary variable shows no overall differences between the young-old and the old-old in functional capability, perhaps because the latter group has had more time to develop functional routines for coping with the environment.

Sex of patient, however, had a much stronger and more widespread impact than age on functional status, influencing five of eight factor scores as well as the summary VEAP variable. As Table 26 makes clear, in four of five specific functional

Table 26

VEAP FACTOR SCORES AS A FUNCTION OF SEX

Factor	Male	Female	F
1 (Independent Living Skills)	-.19	.19	10.05**
3 (General Mobility)	-.19	.19	9.38**
4 (Illumination Problems)	-.12	.12	4.08**
6 (Bus Travel)	.24	-.24	15.10**
7 (Recreational Activities	-.20	.20	10.36**
VEAP SUMMARY VARIABLE	53.2	57.1	12.69***
N	129	129	df = 1,256

$^{**}p < .01$ $^{***}p < .001$

domains (Independent Living Skills, General Mobility, Illumination Problems, and Recreational Activities), partially sighted women fare far worse than their male peers. In only one domain (Bus Travel) is greater functional capability attributable to women. Not surprisingly, then, the VEAP summary variable shows a very substantial sex difference representing more functional limitations for partially sighted women than men. It is likely that these results can in part be explained in terms of sex role socialization differences; that is, women in the age cohort represented by the Center sample may have been socialized from an early age to accept dependency, so they may not have acquired as great a range of independent functional skills and concomitantly may not have as much need to demonstrate them as partially sighted men. But because a very large proportion of older women will eventually live in one-person households (given well-established age and mortality trends), it is crucial for partially sighted women to be equipped with a range of functional skills (Factor 1). On the other hand, sex role socialization may well do an injustice to partially sighted men by posing barriers to the expression of legitimate dependency needs.

In contrast to psychosocial outcomes, remaining demographic variables (education, income and living arrangement) also have some influence on functional outcomes, as Tables 27, 28, and 29 show; none, however, had a consistent impact across functional domains (i.e., none had a significant effect on the VEAP summary variable). Education (Table 27) was found to have an influence on both General Orientation and General Mobility, although there was no linear trend; rather, the question of major importance for these functional domains was whether or not the patient had completed high school. Because education had no impact on more task-specific factors, it is tempting to conclude that the effect of education is to encourage either the ability or the interest required for getting around in the world. Income was also found to influence General Orientation, with middle- and

Table 27

VEAP FACTOR SCORES AS A FUNCTION OF EDUCATION

Factor Factor	Less than a high school degree	High school degree	Beyond high school	F
2 (General Orientation)	.22	-.04	-.31	4.92^{**}
3 (General Mobility)	.36	-.22	-.09	4.72^{*}
N	50	45	49	df=2,141

$^{*}p < .05$ $^{**}p < .01$

Table 28

VEAP FACTOR SCORES AS A FUNCTION OF INCOME

Factor	Low (<$5,000)	Middle ($5,000-10,000)	High (>$10,000)	F
2 (General Orientation)	.25	-.16	-.12	3.18^{*}
4 (Illumination Problems)	.32	.13	-.37	6.68^{**}
N	45	49	50	df=2,141

$^{*}p < .05$ $^{**}p < .01$

Table 29

VEAP FACTOR SCORES AS A FUNCTION OF LIVING ARRANGEMENT

Factor	Alone	With Spouse	With Others	F
2 (General Orientation)	-.13	-.19	.42	6.15^{**}
4 (Illumination Problems)	.29	-.06	-.34	3.74^{*}
N	42	76	34	df=2,149

$^{*}p < .05$ $^{**}p < .01$

higher-income patients experiencing less difficulty than lower-income patients (Table 28). Income was also found to influence coping with Illumination Problems, the higher-income patients having a substantial advantage in this regard. Finally, the same two factors showed effects for living arrangement (Table 29). Interestingly, those who live in larger households (three or more) are seriously disadvantaged with respect to General Orientation skills, perhaps because there is always a close relative at hand to assist. On the other hand, household size seems to have a beneficial impact on illumination problems.

While demographic variables appear to have a stronger influence on functional than on psychosocial outcomes, it is evident that the pattern is similar in both instances; that is, age and sex exert the strongest effects. However,the effects of age are less unequivocably negative for psychosocial than for functional status.

Vision-related variables were subjected to a similar set of analyses. Table 30 presents results of a one-way analysis of variance where pathology type represents a 6-level independent variable. Functional domains for which nature of impairment is important are Independent Living Skills and Problems of Illumination. Interestingly, cataract patients are extremely well off in the area of General

Living Skills, while patients in the "other" category are faring quite poorly on this factor. Conversely, patients in the "other" category experience considerable success in relation to illumination problems, while cataract and glaucoma patients, not surprisingly, have most difficulties with them.

Table 30

Factor	Cataract	Choroid and Retinal	Diabetic Retinopathy	Macular Diseases	Glaucoma	Other	F
1 (Independent Living Skills)	-.61	-.08	-.18	.13	-.04	.17	2.56*
4 (Illumination Problems)	.17	-.18	.12	.16	.16	-.40	2.55*
N	23	31	23	109	18	46	df=5,244

*p < .05

Acuity, in contrast, strongly affects functional status in a number of domains, as Table 31 indicates. While Independent Living Skills show some influence, General Mobility, Social Perception, and the overall VEAP Summary Variable exhibit more substantial effects. In every instance the direction of effect is as predicted--although fully sighted individuals in our sample have some acuity deficits, they are far less restricted functionally than partially sighted individuals who are not legally blind; the latter, in turn, are less limited than those who are legally (but not functionally) blind. When the same analysis is conducted comparing the two subsets of the partially sighted population, the effect on Independent Living Skills disappears; however, strong differences persist for the remaining outcome variables (Factors 2 and 8, and the summary index), with partially sighted patients who are legally blind faring far worse than those who are not. These results are

Table 31

VEAP FACTOR SCORES AS A FUNCTION OF ACUITY

Factor	Fully Sighted	Partially Sighted (not legally blind)	Legally Blind (not functionally blind)	F
1 (Independent Living Skills)	-.51	-.14	.11	3.81^{*}
2[a] (General Orientation)	-.54	-.21	.14	5.74^{**}
8[b] (Social Perception)	-.41	-.26	.16	5.97^{**}
VEAP SUMMARY[c] VARIABLE	50.5	53.4	56.3	5.16^{**}
N	15	76	165	df=2,253

$^{*}p < .05$ $^{**}p < .01$

[a] The partially sighted and the legally blind differ significantly from one another on this factor ($F = 6.65$, $p < .01$) in the expected direction.

[b] The partially sighted and the legally blind differ significantly from one another on this factor ($F = 9.83$, $p < .01$) in the expected direction.

[c] The partially sighted and the legally blind differ significantly from one another on this factor ($F = 5.92$, $p < .01$) in the expected direction.

of considerable importance in demonstrating that the definition of levels of visual impairment advanced by the Center can be supported in terms of clear functional distinctions.

The last three vision-related variables investigated (duration of impairment, perceived impact of the impairment on daily living, and quality of life) had less bearing on functional capability and limitation (see Tables 32, 33, 34). It is interesting to note (see Table 32) that duration of impairment is positively related to functional capability in Independent Living Skills and in Illumination Problems; these results suggest that practice in coping may have improved adaptation to reduced vision. But the effect cannot be regarded as linear, since the group who have had moderate experience with impairment have less success in these domains than either those whose impairment is very recent or those whose impairment is of long duration. In contrast to results obtained for psychosocial outcomes, functional outcomes show only a weak relationship to patients' perceptions of the influence of their impairment on their ability to carry out routine daily tasks (Table 33). The other subjective assessment, however, is more influential--patients' perceptions of the extent to which their impairment interferes with their quality of life show effects in two specific functional domains (General Orientation and Household Tasks), but show most influence on the measure of overall functional level (see Table 34). Although perceptions of impact, then, have some influence on functional capability and restriction, they are less important in determining functional outcomes than objective visual parameters. Development of quantified field measures for use in the coming year will valuably supplement this study by permitting examination of the effects of field restriction on functional outcomes. It should be noted that these results contrast with results obtained for psychosocial outcomes, where internal mediators were observed to have more impact than visual measures per se.

Table 32

VEAP FACTOR SCORES AS A FUNCTION OF DURATION OF IMPAIRMENT

Factor	Short (1 year or less)	Medium (2 to 6 years)	Long (over 6 years)	F
1 (Independent Living Skills)	-.04	.18	-.21	3.06*
4 (Illumination Problems)	.03	.19	-.29	4.55*
N	95	91	65	df=2,248

* $p < .05$

Table 33

VEAP FACTOR SCORES AS A FUNCTION OF PERCEIVED IMPACT OF VISUAL IMPAIRMENT ON DAILY LIVING

Factor	Makes lots of problems	Makes some problems	Makes no problems	F
5 (Household Tasks)	.22	.12	-.21	3.10*
N	40	101	62	df=2,200

*p < .05

Table 34

VEAP FACTOR SCORES AS A FUNCTION OF PERCEIVED IMPACT OF VISUAL IMPAIRMENT ON QUALITY OF LIFE

Factor	Makes it very difficult	Interferes somewhat	Little or no effect	F
2 (General Orientation)	.04	-.23	-.31	3.37*
5 (Household Tasks)	.23	.14	-.22	3.96*
VEAP Summary Variable	58.20	55.61	51.45	10.15***
N	49	83	71	df= 2,200

*p < .05 ***p < .001

In order next to examine these relationships at a multivariate level for purposes of comparing effects of predictor variables taken separately and in combination, procedures employed with psychosocial outcomes were applied to functional outcomes. That is, a series of multiple regressions was carried out, first regressing each of nine functional status variables on the set of demographic characteristics; then the nine variables were each regressed on vision-related characteristics;

finally, each functional status variable was regressed on the combined set of demographic and vision-related variables taken together. (For a more detailed account of these procedures, with information about construction of dummy variables from categorical variables, please refer to preceding parts of this section.) Results are presented in Tables 35 - 38 below, organized in the same manner as those used to present results for psychosocial outcomes above. Data have been tabled for only those analyses in which predictor variables in combination were found to account for a significant proportion of the total variance in a functional outcome measure; however, results of the other analyses will be described and included in the discussion.

As before, results generated by investigating the combined explanatory power of the predictor variables provide corroboration of results obtained from bivariate analyses on functional status. The analyses treating demographic predictors alone showed them to explain from 4 percent to 22 percent of total variance in functional measures. As the tabled results indicate, demographic variables had their strongest impact on Factor 4, Illumination Problems (Table 37). Age, treated in these analyses as a continuous rather than categorical variable, again contributes significantly to functional outcomes in this domain with older patients faring worse. (It should be recalled that throughout these analyses, higher numbers indicate greater difficulty.) The other demographic variable uniquely accounting for a substantial proportion of variation in outcomes is education (also a continuous variable in these analyses). Apparently, extent of educational attainment is strongly predictive of successful coping with problems of illumination. It is our belief that educational attainment here serves as a proxy for a range of prior experiences rather than for specific contents of learning and that the former, rather than the latter, are most likely to be related to functional capability.

In the analyses summarized in Tables, 35, 36, and 38, demographic variables also figure importantly even though they do not, as a subset by themselves, account

Table 35

PREDICTION OF INDEPENDENT LIVING SKILLS (FACTOR 1) BY SET OF DEMOGRAPHIC CHARACTERISTICS AND SET OF VISION-RELATED CHARACTERISTICS (N=117)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	t df=115
Demographic Characteristics				
Age	0.00		0.01	0.95
Income				
Middle Income	0.11		0.21	1.00
Upper Income	0.30		0.27	1.25
Education	-0.02		-0.01	-0.70
Sex (Female)	0.46		-0.40	2.54*
Living Arrangement				
Living with Spouse	0.23		0.20	1.00
Living with Others	0.08		-0.10	-0.38
Vision-Related Characteristics				
Acuity		0.00	0.00	4.79***
Duration of Visual Impairment		0.00	0.00	-0.09
Perceived Impact on Daily Living				
Makes Some Problems		-0.17	-0.29	-1.14
Makes No Problems		-0.10	-0.23	-0.82
Perceived Impact on Quality of Life				
Interferes Somewhat		0.17	0.08	0.36
Has No Effect		-0.21	-0.30	-1.30
Explained Variance	0.09	0.19	0.29	
(multiple R^2)	$F_{(7,109)}=1.52$ (n.s.)	$F_{(6,110)}=4.23^{**}$	$F_{(13,103)}=3.17^{***}$	

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

Table 36

PREDICTION OF GENERAL ORIENTATION (FACTOR 2) BY SET OF DEMOGRAPHIC CHARACTERISTICS
AND SET OF VISION-RELATED CHARACTERISTICS
(N=117)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	*t* *df*=115
Demographic Characteristics				
Age	0.003		0.003	0.81
Income				
Middle Income	-0.10		-0.13	-0.82
Upper Income	-0.02		0.03	0.18
Education	-0.03		-0.02	-1.34
Sex (Female)	0.20		0.25	2.07*
Living Arrangement				
Living with Spouse	0.19		0.16	1.04
Living with Others	0.41		0.39	1.92
Vision-Related Characteristics				
Acuity		0.00	0.00	0.18
Duration of Visual Impairment		-0.00	-0.00	-0.69
Perceived Impact on Daily Living				
Makes Some Problems		0.34	0.44	-2.27*
Makes No Problems		0.46	0.46	-2.23*
Perceived Impact on Quality of Life				
Interferes Somewhat		-0.44	-0.44	-2.52*
Has No Effect		-0.54	-0.55	-3.15***
Explained Variance	0.10	0.10	0.19	
(multiple R^2)	$F_{(7,109)}=1.71$ (n.s.)	$F_{(6,110)}=1.97$ (n.s.)	$F_{(13,103)}=1.86$*	

*p < .05 **p < .01 ***p < .001

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

PREDICTION OF ILLUMINATION PROBLEMS (FACTOR 4) BY SET OF DEMOGRAPHIC CHARACTERISTICS
AND SET OF VISION-RELATED CHARACTERISTICS
(N=117)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	t df=115
Demographic Characteristics				
Age	0.01		0.01	1.96*
Income				
Middle Income	-0.12		-0.06	-0.25
Upper Income	-0.40		-0.39	-1.62
Education	-0.06		-0.06	-2.71**
Sex (Female)	0.07		0.08	0.49
Living Arrangement				
Living with Spouse	-0.13		-0.16	-0.71
Living with Others	-0.37		-0.45	-1.56
Vision-Related Characteristics				
Acuity		0.00	0.00	0.59
Duration of Visual Impairment		-0.01	-0.01	-1.05
Perceived Impact on Daily Living				
Makes Some Problems		0.17	-0.16	-0.56
Makes No Problems		0.46	-0.02	-0.05
Perceived Impact on Quality of Life				
Interferes Somewhat		-0.12	-0.10	-0.42
Has No Effect		-0.10	-0.21	-0.83
Explained Variance	0.22	0.04	0.25	
(multiple R^2)	$F_{(7,109)}=4.54^{***}$	$F_{(6,110)}=0.75$ (n.s.)	$F_{(13,103)}=2.65^{**}$	

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

Table 38

PREDICTION OF SUMMARY VEAP VARIABLE BY SET OF DEMOGRAPHIC CHARACTERISTICS AND SET OF VISION-RELATED CHARACTERISTICS
(N=117)

	Beta Coefficients			
	Demographic Characteristics	Vision-Related Characteristics	Demographic Vision-Related Characteristics	*t* *df*=115
Demographic Characteristics				
Age	0.00		0.05	0.94
Income				
Middle Income	-0.44		0.63	0.33
Upper Income	0.98		0.91	0.45
Education	-0.35		-0.37	-1.96*
Sex (Female)	3.69		3.62	2.49*
Living Arrangement				
Living with Spouse	2.21		1.99	1.06
Living with Others	-1.81		-2.60	-1.06
Vision-Related Characteristics				
Acuity		0.01	0.01	2.24*
Duration of Visual Impairment		-0.05	-0.05	-0.75
Perceived Impact on Daily Living				
Makes Some Problems		0.67	-0.80	-0.34
Makes No Problems		0.76	-1.21	-0.47
Perceived Impact on Quality of Life				
Interferes Somewhat		-1.42	-1.95	-0.92
Has No Effect		-5.02	-5.80	-2.72**
Explained Variance	0.11	0.09	0.23	
(multiple R^2)	$F_{(7,109)}=1.92$ (n.s.)	$F_{(6,110)}=1.84$ (n.s.)	$F_{(13,103)}=2.42$**	

*p < .05 **p < .01 ***p < .001

NOTE: Income, Living Arrangement, Perceived Impact on Daily Living and Perceived Impact on Quality of Life are dummy variables representing 2 of 3 categorical levels. Sex is a dummy variable representing 1 of 2 categorical levels. Remaining variables are continuous.

for a significant proportion of outcome variance. Specifically, sex was found to contribute uniquely to variance in both Independent Living Skills (Factor 1) and General Orientation (Factor 2), with women experiencing greater functional limitation than men in both domains (Tables 35 and 36). Finally, the same pattern emerged in the analysis of the VEAP Summary Variable, where female patients were observed to be at a significant disadvantage in overall functional capability (Table 38). However, in relation to overall functional capability, educational attainment proved to be even more important, underscoring the positive relationship obtained in bivariate analyses between education and functional status.

Studying relationships obtained between vision-related predictors and functional outcomes yielded a similar range of explained variance; that is, visual characteristics taken as a separate subset explained from 4 percent to 19 percent of total variation in functional status scores. But unlike demographic variables, vision-related variables had their strongest effect on the first factor, Independent Living Skills (Table 35), accounting for two-thirds of the explained variance. Among the set of visual characteristics contributing to this outcome, acuity (treated here as a continuous variable) uniquely explained a substantial part of the variance--accomplishment of a variety of every day behaviors not surprisingly is limited by impaired acuity.

A second functional domain in which vision-related characteristics were of major importance is General Orientation (Factor 2), but here subjective perceptions of visual impairment have greatest explanatory power (Table 36). Variables representing preceived impact of impairment on ability to carry out daily living tasks uniquely accounted for a significant proportion of the variation in General Orientation, but the perceived effect of the impairment on quality of life had even more predictive power. The importance of such internal mediators is further supported by examining analyses of Factors 3 and 6 (General Mobility and Bus Travel, respectively). While vision-related characteristics do not account for a significant proportion of the total variance in these outcomes, scores in both domains are significantly influenced by the perceived impact of impairment on quality of life ($p<.05$). Finally, vision-related characteristics have a noticeable influence on the VEAP Summary Variable. Here acuity significantly predicts functional outcomes overall, and perceived impact of impairment on quality of life has even stronger effects on functional status.

When demographic and vision-related characteristics are combined, they are observed jointly to explain from 8 percent to 29 percent of the variation in functional capabilities and limitations. In comparison with analyses of psychosocial status, investigations of functional status show more comparable effects for demographic and vision-related variables when the two sets of predictors are jointly reviewed. Among demographic predictors, sex is observed to bear a consistent relationship to functional outcomes, with partially sighted women more restricted. As we noted earlier, sex should probably be interpreted to represent sex role socialization; women in the modal age categories of the patient sample were probably not encouraged to acquire or to strongly value independent functional skills. On the other hand, the combined analyses do not demonstrate age per se to contribute systematically to functional outcomes. Rather, after sex, education was found to be the other most important contributor to variance in functional measures (in contrast to psychosocial measures, where age was more important). Among the vision-related characteristics, estimates of objective visual parameters and subjective perceptions of their impact were more evenly balanced in predictive power in relation to functional as compared with psychosocial status. Acuity figured substantially in the explanation of Independent Living Skills and overall functional capability, in contrast to its role in regressions involving psychosocial outcomes. However, in both outcome areas, duration of impairment had little overall effect.

What is strikingly consistent in examining the two sets of analyses is the influence of internal mediators of impairment, especially patients' perceptions of the extent to which visual impairment constitutes an impediment to quality of life. It should be underscored that these data provide strong justification for the contention that psychological services ought to be offered to partially sighted individuals to assist their adaptation to severely reduced vision. Moreover, they firmly support the Center's approach to psychological intervention (described in Section III B above). That is, they indicate that services aimed at ameliorating patients' perceptions of their impairment can be expected to have an important influence on both functional and psychosocial well being.

Center Intervention

The preceding sections of data summary describe in terms of demographic, visual, psychosocial, and functional characteristics the sample of patients who made contact with the Center and sought low vision services. This section presents a quantitative description of the interventions they received. Table 39 breaks down the patient sample by number of visits to the Center.

Table 39

NUMBER OF APPOINTMENTS BY CENTER PATIENTS
(N=560)

# of Appointments	Number	Percent
at least 1	560	100
at least 2	383	68
at least 3	218	39
at least 4	127	23
more than 4	59	11

As these data indicate, in the 11 months of the current reporting period, the Center completed nearly 1500 patient appointments. During any single appointment, a patient often receives multiple services. In particular, a patient's first and second appointments to the Center may include intake interviewing, low vision examination, prescription of low vision aids, and training in their use. In addition, a patient may receive a psychological screening as a preliminary to individual or group counseling, or the patient may begin the process of referral to community resources. Third and subsequent appointments are generally for one service only, although for patients still in need of several types of assistance the project attempts to schedule multiple services on the same day.

The entire sample (N=560) received some type of low vision optometric service, with the number of additional service contacts for each patient varying in relation to the extent of impairment, the number of aids prescribed, and the ability of the patient to respond to aids training.

In the original proposal for this Center, we suggested that many visually impaired persons (excluding the functionally blind) were not receiving treatment appropriate to their visual condition and special needs. Specifically, we believed that despite the wide variety of low vision aids currently available, many partially sighted persons (who are not functionally blind) would receive aids that fell short of meeting important visual needs and would most likely not receive any training in the use of these aids. Data in Tables 40 and 41 confirm these views. Table 40 compares the visual aids (including ordinary spectacles and contact lenses) that patients were using at the time of their first Center visit with visual aids prescribed by the Center and subsequently purchased by patients.

For reporting purposes visual aids are listed in Table 40 according to generic name (generic names and specific designations falling within them are found in

Table 40

LOW VISION AIDS CURRENTLY IN USE AT FIRST VISIT AND LOW VISION AIDS PRESCRIBED BY CPS

Low Vision Aid	Low Vision Aids Currently in Use		Low Vision Aids Prescribed by CPS	
	N	% of Total	N	% of Total
Conventional Lenses (including contacts)	528	42	100	10
Telescopes, Monocular	23	2	41	4
Telescopes, Binocular	35	3	5	1
Telescopic Spectacles	3	0	30	3
(including telemicroscopes)	1	0	12	1
Microscopic Spectacles	40	3	158	17
Loupes (head mounted)	16	1	6	1
Magnifiers, Hand-Held (illuminated and non-illuminated)	327	26	80	8
Magnifiers, Stand (nonilluminated)	22	2	21	2
Magnifiers, Stand (illuminated)	38	3	69	7
Artificial Aperture Contact Lenses	0	0	0	0
Field Expansion Aids	0	0	2	0
Light Control Aids (decrease illumination)	191	15	113	12
Light Control Aids (increase illumination)	7	1	43	5
Electro-Optical Aids (e.g., CCTVs)	22	2	12	1
Nonoptical Aids[a]	9	1	261	27
N	1262		953	

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[a] Nonoptical aids include Typoscope/checkwriting guide, bookstands, occluders, jumbo playing cards, large print phone dials, and others.

Appendix H3.). Among all the visual aids in use at the time of a patient's first visit, fully 42 percent were conventional lenses including contacts, while 26 percent were hand-held magnifiers. (These percentages present an interesting comparison with data from the last reporting period where the percentages were almost exactly reversed: that is, 27 percent of the patients in the previous year had conventional lenses including contacts, while 43 percent used hand-held magnifiers.) In contrast, project optometrists prescribed only 10 percent and 8 percent respectively in the conventional lens and hand-held magnifier categories. Moreover, while only 1 percnet of patients had previously made use of available, effective, and low cost non-optical aids, 27 percent of all aids recommended by project optometrists fell within this category. There also appears to be a relative lack of low vision aids for distance viewing among those in use by patients; 5 percent of existing aids, as compared with 9 percent of aids prescribed by the Center, fall in this category. The importance of aids in this category should be underscored because ignoring the mobility potential of visually impaired persons by neglecting distance aids tends to make them more dependent on family or institutions for many instrumental living tasks.

Looking more closely at demographic variables in relation to aids previously in use and aids prescribed by the Center provided additional information of interest. Kinds of aids* prescribed by the Center were significantly related to age group, as Table 41 shows. The youngest group (20 and under) were prescribed a majority (40 percent) of telescopic aids, consistent with their expected involvement in distance- and mobility-related tasks. For the working-age group, the aids were more evenly distributed between conventional lenses or contact lenses (25 percent). and telescopic aids (23 percent). In the two older age groups,

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*Only the first aid prescribed was used in constructing the χ^2; a substantial majority of patients were prescribed two or more aids.

Table 41

AGE AND LOW VISION AIDS PRESCRIBED BY THE CENTER

	Conventional Lenses and Contacts	Telescopes (Monocular and Binocular)	Microscopic Spectacles	Magnifiers (Hand and Stand)	Other[a]	
20 and younger	6 (1.6%)	17 (4.4%)	4 (1.0%)	7 (1.8%)	8 (2.1%)	42 (10.8%)
21 - 59	16 (4.12%)	15 (3.9%)	8 (2.1%)	8 (2.1%)	17 (4.4%)	64 (16.5%)
60 - 74	11 (2.8%)	6 (1.6%)	22 (5.7%)	29 (7.5%)	37 (9.5%)	105 (27.0%)
75 and older	16 (4.12%)	4 (1.0%)	50 (12.9%)	41 (10.6%)	66 (17.0%)	177 (45.6%)
	49 (12.6%)	42 (10.8%)	84 (21.7%)	85 (21.9%)	128 (33.0%)	388 (100.0%)

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[a] Includes loupes, artificial aperture contact lenses, field expansion aids, telemicroscopes, light control aids, electro-optical aids, and nonoptical aids.

$X^2 = 86.2$ $df = 12$ $p < .0001$

60 percent of the aids prescribed fell in the categories of magnifiers and other (including nonoptical aids, light control aids, and electro-optical aids). In general, then, the older the patient, the more likely a near-task aid will be first prescribed. These results reflect a general decrease in mobility-related activities with age; they also reflect the Center's clinical practice of first prescribing aids for older adults most similar to those they have already been using in order to obviate potential problems with becoming used to an unfamiliar type of low vision aid. In the analysis of data from the previous year's operation, we had observed a significant relationship between sex and type of aid prescribed, with female patients receiving a disproportionately few distance-aid prescriptions. We were concerned that this practice might reinforce or perpetuate the tendency (see discussion of outcomes, previous section of the data summary) for partially sighted women to restrict their capabilities for independent functioning. The data collected for the present reporting period do not yield a significant association between sex and type of aid prescribed, although it is still the case that more distance-aids are prescribed for males and more near-aids for females ($p < .11$)

On the whole, then, these data seem to indicate that Center patients are receiving prescriptions for a greater variety of low vision aids more likely to meet the multiplicity of special needs of the partially sighted population. Not surprisingly, prescriptions were found to be related to severity of impairment ($p < .001$), the fully sighted most often being prescribed conventional lenses and the more severely impaired receiving roughly equivalent numbers of aids across the entire range of low vision aid categories.

The fact that an aid has been prescribed does not in itself indicate whether the patient found it useful. At the time of patients' first visits to the Center, we asked for evaluative judgments with respect to each aid in use (N ≅ 1100). Table 42 below displays the results of three such inquiries, and the results are similar to those obtained from the previous reporting period. That is, over 90 percent of patients, by self-report, never received any training in the use of previously obtained visual aids. Center experience, however, suggests that most patients should be trained in the use of the recommended aids in order to best fit the aid to visual conditions and specific functional needs, as well as to help insure continued use of the aid outside of the clinical setting. Despite the fact that they received little or no training, a majority of patients report that they use their aids frequently; nevertheless, only 23 percent find that the aid works well for them. It is likely that Center services have expanded the range of visual aids available to partially sighted persons and have provided much needed (and hitherto wholly unavailable) training and counseling.

Table 42

AIDS PREVIOUSLY IN USE BY PATIENTS

	All Aids in Use	
	Number	Percent
Received Aid Training		
Yes	110	10
No	956	90
Frequency of Aid Use		
Frequently	663	61
Sometimes	282	26
Rarely	152	14
Helpfulness of Aid		
Very Helpful	250	23
Helpful	499	46
Not Very Helpful	347	32

The low vision examination, prescription of aids, and training in the use of aids usually require a minimum of two Center appointments. In addition, of our current sample, 27 patients (7 percent of the patients who completed the two-visit low vision evaluation) were scheduled for orientation and mobility training, with an average number of four one-hour training sessions per patient. Community referrals have been averaging approximately 20 per month during this reporting period, with one-third of the referrals directed to social service agencies, another third directed to recreational activities (either sponsored by the Center or available in the Los Angeles area), and the remaining third evenly divided between transportation problems of patients and educational or vocational opportunities. Time required to make a referral varies, and an average would be difficult to estimate. In general, the referral process involves first arranging a contact between the parient and the appropriate agency, and then following through to make sure that the receiving agency responded to and, insofar as possible, acted on the needs of the patient.

Psychological services break down as follows: 51 patients received a psychological screening; subsequently, 38 enrolled for individual counseling where treatment ranged from 2 to 5 one-hour sessions focused on adjusting to the visual impairment, and from 6 to 20 sessions dealing with more severe depression over visual loss and other attendant problems. With respect to group counseling, 20 persons from our sample of 560 have utilized the weekly older patient group, attending on average three meetings each; 7 patients have made use of the monthly working-age group, attending on average two and one-half meetings each; and parents (both single parents and couples) of 10 partially sighted children have come to the bimonthly parent group, attending on average 2 meetings.

Overall, then, the mean number of visits per patient (N = 560) currently is about 2.6, and the average number of distinct service contacts is about 4.5 per patient.

Follow-up

A unique aspect of the Center's evaluation program is the collection of follow-up data concerning patients' visual and psychosocial functioning and environmental adaptation. Follow-up procedures are initiated approximately six months after a patient's initial appointment with the Center. An on-site visit is made by a Personal Environmental Adjustment Counselor (PEACer) to: (1) directly observe and evaluate the use of any low vision aids prescribed by Center optometrists; (2) observe the extent to which the patient has resolved visual environmental adaptation problems previously reported and note the presence of any unmentioned environmental hazards; (3) question the patient concerning difficulties observed or reported in the use of prescribed low vision aids; and (4) administer the three psychosocial measures as well as a patient satisfaction scale. Follow-up visits are conducted, where possible, in the patient's most significant functional environment; older adults who are not working are assessed at home, working-age adults at their place of employment, and youths at their school site.

This section summarizes follow-up information for 55 patients included in the current dataset. Although the number of patients for whom follow-up data is available is too small to permit detailed longitudinal analyses, these preliminary analyses provide useful descriptive information and tentative conclusions.

Of the 55 follow-up visits made, the vast majority (88 percent) were conducted in patients' homes. An additional 8 percent occurred in patients' work settings, 2 percent occurred in schools and 2 percent occurred in other locations. Another person (usually a family member) was present throughout the follow-up visit in 50 percent of the cases. One-way mileage from the Center to the follow-up site averaged 16 miles, with a range of 1 to 65 miles. Travel time averaged 48 minutes per one-way trip, reflecting the size of the geographic region from which patients are drawn locally. The average duration of follow-up visits was between 1-1/2 and 2 hours. In light of the average distance to the follow-up site, the travel time involved and the length of the visit itself, it is apparent that the collection of follow-up data requires a considerable commitment of Center resources and energy. Therefore, we find it expedient to schedule several follow-up visits within a given geographic area for the same day, even though attendant scheduling problems are numerous.

Patient's attitudes toward the follow-up visit were rated by PEACers on a five-point scale of cooperativeness (ranging from very cooperative to very uncooperative). Fully 85 percent were rated very cooperative, 11 percent were rated neutral toward the visit, and only 4 percent were rated slightly uncooperative. When significant others were present during the visit, their attitudes were also rated. These ratings showed a similar breakdown, with 81 percent rated very cooperative, 12 percent neutral and 8 percent slightly uncooperative.

Demographic Characteristics. Demographic characteristics of the follow-up sample parallel those of the larger patient sample. Nearly equal numbers of men (51 percent) and women (49 percent) contributed follow-up data. Across age categories, 2 percent were age 20 or younger, 20 percent were age 21 to 59, 29 percent were age 60 to 74, and 49 percent were 75 or older. Relative to living arrangements, 44 percent were living with their spouse, 35 percent were living alone, and 22 percent were living with other relatives. With respect to level of education, 26 percent had not completed high school (only one school-age patient, still in elementary school, was in the sample), 28 percent had completed high school, and 46 percent had attained post-high school education. Comparison with the figures presented in Table 6 indicates that the follow-up sample is somewhat better educated than the larger patient sample. Income levels showed a fairly even distribution, with 29 percent earning less that $5,000, 31 percent earning between $5,000 and $10,000 and 40 percent earning over $10,000. These figures (as compared with those given in Table 8) indicate that a higher proportion of upper income individuals are represented in the follow-up sample. The minority representation in this subset (11 percent) is also less than in the full dataset (21 percent). Finally, relative to patients' visual status, 2 percent were classified fully sighted (included in the sample because they had deteriorating eye conditions. 31 percent were classified partially sighted but not legally blind, and 67 percent were legally but not functionally blind.

Patient Flow. Although generalization from the follow-up sample to the entire patient sample must be undertaken with caution, data reported below suggest that patients make full and extensive use of the comprehensive services provided by the Center. In terms of number of visits per patient, including the follow-up visits, 100 percent of the follow-up sample had at least 2 appointments, 94 percent had 3 or more, 80 percent had 4 or more appointments, and 49 percent had at least 5 appointments, with one patient, who participated in the older patient group, recording 20 appointments. Moreover, these patients made use of the diverse services provided by the Center. All patients received a low vision evaluation and low vision aids training, with 16 percent receiving 5 or more aids training sessions; 7 percent received at least 1 session of orientation and mobility instruction; 20 percent received 1 or more psychological services, including 11 percent who received a psychological screening, 13 percent who were involved in individual counseling, 17 percent who were involved in one or more sessions of the older patient group, and 4 percent who were involved in one or more sessions of the working-age group. There were 15 community referral contacts made for the follow-up sample of

55 patients. One patient received a VER/ERG assessment. Finally, as of the end of March 1980, 93 percent of this subset were still considered active patients; the remaining 7 percent had been dismissed on the basis of having completed services at the Center.

Assessment of Environmental Hazards. During the follow-up visit, PEACers evaluated patients' environments (most commonly home environments) for the presence of a set of potential environmental hazards that are particularly amenable to simple and low-cost modifications. While all PEACers used a standard checklist of hazards, only those applicable to the on-site environment were evaluated. The environmental hazards are listed along with the percent of those sites requiring modification: stairs-4 percent; lighting-31 percent; organization of the environment relative to ease of mobility and locating items-7 percent; doors properly open and close-4 percent; glass or screen doors properly open and closed and are suitably marked to indicate when closed-18 percent; and moveable objects located in normally travelled paths-4 percent. Insufficient illumination and poor location of light source were the most frequent environmental hazards observed; recommendations for modifications regarding any environmental hazard observed were made to patients during the follow-up visits.

Low Vision Aid Assessment. Patients' use of low vision aids was assessed through behavioral observation and self-report. The behavioral component of assessment involved asking patients to perform a set of tasks representing functions for which aids had been prescribed by low vision specialists. This procedure asking patients to perform specific tasks rather than asking them to demonstrate the use of their aids provided an estimate of the extent to which the aid(s) had been assimilated into their daily functioning. This strategy was employed to facilitate spontaneous use of low vision aids. PEACers identified the aids to be assessed and defined an appropriate set of performance tasks in consultation with the low vision specialists prior to the follow-up visit. In addition to aids prescribed by the Center, aids used by patients prior to treatment at the Center were also evaluated. As noted in a previous section of this report, all patients are instructed to bring with them to the first appointment any aids currently in use. One reason for this was not to replicate an aid that a patient already owned and which was judged by the low vision specialist to be appropriate for the patient's use. A total of 260 aids were evaluated for the follow-up sample of 55 patients. Of these, 50 percent were prescribed at the Center and 36 percent were acquired elsewhere. Patients attempted 13 percent of the tasks using no aid at all.

The ease with which patients accomplished the assigned tasks was rated by PEACers in three categories--"easily accomplished", "accomplished with difficulty", or "did not perform the tasks". This last category included instances in which the patient was unwilling to perform the task and in which the task could not be performed conveniently at the site. (Mobility tasks involving distance aids were typically not included because of the time involved.) Fifty-seven percent of the tasks were rated as easily accomplished -- no apparent problems; 16 percent were rated as accomplished with difficulty; and 27 percent of the tasks proposed were not attempted by the patient.

In addition to the global dimension of ease of accomplishment, aid use was evaluated according to a set of specific criteria. These criteria were developed to apply to a range of aids commonly prescribed at the Center. These criteria are presented below, along with information about the proportion of patients whose performance, in the PEACers' judgments suggested a need for further aid training or environmental modification: (1) location of the aid relative to the patient's eye (1 percent); (2) the appropriate distance between the patient, the aid, and the object being perceived (2 percent); (3) the use of appropriate levels of illumination while performing the tasks (23 percent); (4) the correct positioning of the light source relative to the task (24 percent); (5) the correct positioning of the hand-held aid and/or the most comfortable and efficient positioning of the patient while performing the task (8 percent); and, (6) the ability to adjust the aid being used (5 percent).

These figures suggest that patients' difficulties using their aids are primarily related to problems with illumination. Of the criteria listed, the two pertaining to illumination involve techniques that are least directly transferrable from the clinical setting at the Center to the patient's home or other appropriate site. The other criteria involve two techniques that are not as situation-specific. Even though visual aid training occurs at the Center in lighting conditions optimal for each patient, the data suggest that patients need additional assistance in replicating these conditions at home or in other significant environments.

To supplement the behavioral observations of aid use, patients were asked about the frequency and duration of their aid use (Appendix F3.(3), 8 items) as well as problems encountered in using their aids (Appendix F3. (3), open-ended items). Summary information is given below about the frequency and duration of use for the first visual aid evaluated: 13 percent used the aid less than once weekly or not at all; 35 percent used it weekly; 32 percent used it every other day; 14 percent used it daily; and 6 percent used it more than once daily. With respect to the average duration of use: 7 percent never used the aid; 34 percent used the aid 15 minutes or less per each occurance; 37 percent used it between 16 and 30 minutes; 13 percent used it between one-half and one hour; 3 percent used it between one and two hours; 4 percent used it between two and five hours; and 2 percent used it for over five hours per each occurence. Interpretation of these figures must be made with caution since they only pertain to the first aid evaluated for each patient and since the aid could be any one of a large set of low vision aids commonly prescribed. These data on the frequency and duration of use, although low in absolute terms, are encouraging when the number of different aids used by patients (an average of 5 aids) is taken into account. Moreover, the follow-up sample contains a very large proportion of older adults for whom environmental demands requiring the use of a low vision aid may be relatively intermittent (e.g., to assist in grocery shopping, reading mail, or detecting bus numbers). For older adults, intermittent and relatively short use of low vision aids may nevertheless represent a valuable contribution to the maintenance of independent living.

Patients' comments about problems encountered in using their aids or problems that prevented use of their aids were recorded verbatim by PEACers. These responses were subsequently categorized and coded by the evaluation team. Table 43 below summarizes information about problems reported by patients. Patients reported that they were experiencing no problems with 50 percent of the aids. This compares favorably with PEACers' estimates, reported earlier, that 57 percent of the assigned performance tasks were accomplished easily. The figures reported in Table 43 indicate that perceived problems in the use of aids are fairly evely distributed across problem categories with the exception of the category representing psychological factors. While the low freqency of psychological reasons cited may reflect a self-presentation bias, it is also consistent with a large body of social psychological research that suggests that individuals tend to process information in a way that minimizes internal, or dispositional, attributions for their behavior.

Table 43

SELF-REPORTED PROBLEMS IN THE USE OF LOW VISION AIDS

Problem	Percent of Aids for which Problem was Cited N=260*
No Problems Reported	50%
The Low Vision Aid (LVA) Itself	
Doesn't fit, cumbersome, awkward, too heavy, falls off	8%
Mechanical problem	4%
Doesn't know how to use or adjust	3%
The LVA and Visual Condition	
Visual condition has worsened/LVA not strong enough/LVA no longer appropriate	9%
Eyes tire, headaches, burning, etc., accompanying LVA use	6%
The LVA and Functional Goals	
LVA too limited in scope/range	4%
LVA not appropriate/no help at all	5%
Unable to use LVA on site for a specific task (e.g., pool illumination)	2%
Too difficult/too much trouble to use for intended goal	3%
The LVA and Psychological Reasons	
Afraid eyes would worsen thru use of LVA	0%
Vanity	0%
Doesn't like to use	1%
Forgot they had it	0%
Other	
Lost or stolen	5%
Prevented from using (e.g., teacher)	1%

*These percentages are based on the total number of aids evaluated for the follow-up sample of 55 patients.

Psychosocial Functioning. An important question to evaluation concerns the extent of change in patients' psychosocial functioning following receipt of comprehensive low vision services. To assess change in well-being, the three psychosocial measures were readministered during the following visit. Difference scores were constructed for each measure by subtracting the pre-test score from the post-test score. This section briefly summarizes preliminary analysis aimed at describing the magnitude and direction of change and at identifying factors associated with change in psychosocial status. In light of the small number of follow-up cases, these analyses must be considered tentatively.

In general, little measurable change was observed in patients' psychosocial functioning. Paired *t*-tests yielded no significant pre/post differences for any of the measures. At least two factors may have contributed to these nonsignificant results. First, as noted earlier, patients' pre-test scores on the psychosocial measures were very positively skewed. As a result, there was relatively little room for patients to improve on these measures. Second, the number of cases in the following subset was too small to be sensitive to modest changes in well-being. These problems are expected to be minimized in the future with revision of the psychosocial measures and a larger data base.

Despite the small magnitude of change observed, there is some evidence that when change did occur, it occurred in a positive direction. A sign test of patients' difference scores on the self-description measure indicated that the number of positive changes exceeded that expected by chance ($z=1.76$, $p<.05$). A sign test for the mood and morale difference scores indicated that the number of positive changes was marginally different from chance ($z=1.29$, $p<.10$).

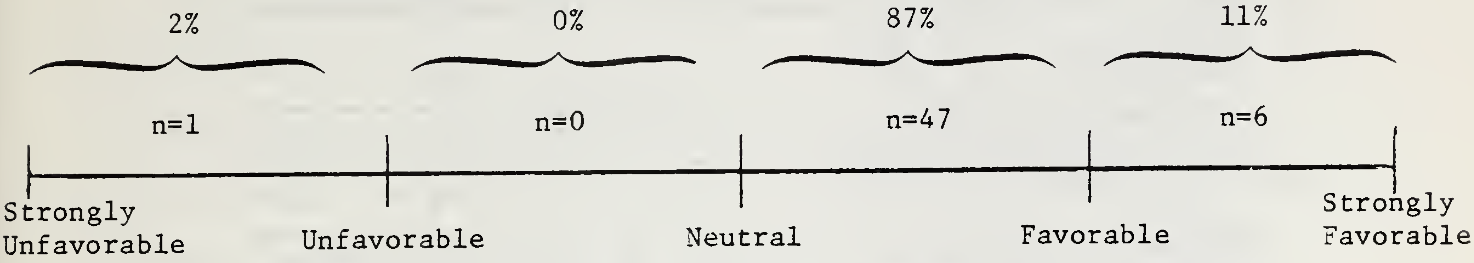
Given the encouraging, if modest, trend of these results, we then attempted to identify factors associated with positive change in psychosocial functioning.

For this purpose we examined through analyses of variance the same set of predictor variables discussed in an earlier section of the data summary. For contrast to the results of analyses reported earlier, these analyses failed to find significant associations between gender and age and psychological outcomes, measured in the present context as a change in psychosocial status. In fact, only two of the entire set of predictor variables examined were significantly related to change in psychosocial functioning. Patients who are partially sighted but not legally blind showed significantly greater improvement from pre-to post-test than patients who are partially sighted and legally blind. This same pattern was marginally significant (F=1.41, df=1,45, p<.08) for the measure of life satisfaction. While one possible interpretation of this finding is that the psychological well-being of moderately visually impaired individuals is more amenable to improvement than that of severly visually impaired individuals, the tentativeness of these results should be underscored. The second predictor variable significantly associated with change in psychosocial functioning was the duration of the visual impairement. Self-description scores of individuals who had become visually impaired quite recently actually showed slight decrements, whereas individuals who had been visually impaired for several years showed slight increments; individuals whose impairment was long-term showed virtually no change.

While these results suggest some tentative hypotheses, our future projections include extending the scope of these analyses considerably. A very important extension given a sufficient number of cases, will be to link changes in psychosocial status to parameters of treatment.

Patient Satisfaction. The last instrument administered during the follow-up was a 27-item patient satisfaction scale adapted from a nationally normed instrument developed by Ware and his colleagues (Ware et al, 1977) for the National Health Insurance Study. Items were modified to make their content specific to the Center and visual impairment. Several items were added that pertained directly to the evaluation research aspect of the project with specific reference to the data gathering process. Table 44 displays percentage of patients' responses by category (see Patient Satisfaction Scale, below).

Summary scores were created by reversing negatively-keyed items and summing them. The distribution of summary scores is given below.



Average scores ranged from 3.2 through 4.3 with a mean of 3.7. These data indicate that patients generally held very positive attitudes toward services provided by the Center. Most notably, 88 percent of patients reported satisfaction with visual care received at the Center.

The only item that produced an overall unfavorable response was item 3. In effect this item asked the patient to judge how helpful treatment at the Center would be for most patients like themselves. Fifty-nine percent disagreed that most people would be helped a great deal despite the fact that the vast majority were satisfied with their own visual care at the Center.

During instrument development, the staff expressed concern about patients' reactions to the research process, including the possibility that patients would not understand the need for extensive information gathering (item 4); that patients would think the intake process took too long (item 15); that it would be boring (item 8); and that some interview questions would be inappropriate or intrusive (item 18). Responses to these items indicated that patients' reactions to the intake and follow-up research activities were generally very favorable. The vast majority of patients did not find the research procedures boring, intrusive, or too long. The only item

Table 44

PATIENT SATISFACTION SCALE

(N=54; Numbers are in percents)

	STRONGLY AGREE	AGREE	NOT SURE	DISAGREE	STRONGLY DISAGREE
1. I'm very satisfied with the visual care I received at the center.	20	68	6	6	0
2. Parking was a problem.	9	26	13	52	0
3. Most people with vision related problems are helped a great deal when they come to the Center.	0	4	31	59	6
4. With respect to the Center's research program, I did not understand the need for the intake procedures and interviews.	0	32	6	60	2
5. The service providers weren't as thorough as they should have been.	0	4	6	74	17
6. If I had a question about my vision I could ask for help without any problem.	11	81	4	4	0
7. The doctor did his/her best to keep me from worrying.	13	70	15	2	0
8. The intake process (interviews, etc.) was boring.	2	13	2	68	15
9. The doctor was very careful to check everything when examining my vision.	20	70	7	2	0
10. The personnel at the Center treated the patients with respect.	52	48	0	0	0
11. It was hard to get an appointment at the Center right away.	0	19	6	70	6
12. Doctors at the Center can almost always help a person see better.	4	47	38	11	0
13. Medical insurance coverage should pay for more expenses than it does.	15	49	24	11	0
14. It takes me a long time to get to the Center.	9	38	4	49	0
15. The intake process took too long.	0	13	4	81	2
16. Doctors at the Center are able to relieve or cure most vision related problems that people have.	4	24	58	11	2
17. Sometimes the doctor made the patients feel foolish.	0	2	2	81	15
18. Some of the interview questions were inappropriate or were too intrusive.	4	17	6	72	2
19. The Center avoided unnecessary patient expenses.	4	74	21	2	0
20. The Center is conveniently located.	4	57	4	34	2
21. The Center lacks some things needed to provide complete visual care.	0	15	60	23	2
22. The Doctor at the Center seemed very competent and well-trained.	24	74	0	2	0
23. The office hours at the Center are good for most people.	4	78	15	2	2
24. You could get good visual care at the Center even if you didn't have money with you.	4	91	4	2	0
25. There are things about the visual care I received that could have been better.	0	4	24	64	8
26. People were usually kept waiting a long time at the Center.	2	9	4	79	6
27. The Doctor at the Center seemed to have a genuine interest in the patient as a person.	20	74	2	4	0

of this set to which a sizeable number of patients (32 percent) responded negatively was the item reflecting patients' understanding of the need for extensive information gathering. This suggests that greater care may need to be taken to insure that patients understand the purpose of the evaluation research. We feel confident in concluding, however, that our research and evaluation procedures do not impact negatively on individual patients and that, in general, patients were very positive about their contact with the Center.

Follow-up Recommendations. Recommendations for further services are made by the PEACer at the conclusion of the follow-up visit. These recommendations are communicated to the patient and are also recorded on a checklist in the follow-up instrument. The nature of the services needed is also described more fully in a separate referral form to the appropriate service provider at the Center (Appendix F5). Depending on the nature of the recommendation, the patient is called by the appropriate service provider to further explore the problem, and if needed, to schedule an appointment at the Center for the recommended service. Subsequent phone calls are made or letters sent as needed. Follow-up contacts made on the basis of the PEACers' recommendations are a regular and important part of Center procedures .

Table 45 below gives the service check list and the percent of follow-up patients for whom each type of recommendation was made:

Table 45

FOLLOW-UP RECOMMENDATIONS

Service Recommended	Percent *
Low Vision Reevaluation	24
Low Vision Aids Reassessment	51
Low Vision Aids Retraining	22
Individual Counseling	25
Family Counseling	11
Older Patient Group	14
Working-age Group	7
Orientation and Mobility Training	13
Environmental Modifications	9
Behavioral Modifications	0
Community Resource Referral	13

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*Since patients could be referred for more than one service, the percents do not total to 100.

The incidence alone of these recommendations underscores the critical need for ongoing follow-up services and, although analytically derived outcome results are not presently available, the data should be considered as prima facie evidence of the complexity of the problem involved in providing comprehensive services for the partially sighted.

V. CONCLUSIONS

Over the past reporting period, persons referred to the Center for the Partially Sighted increased by 31 percent over an already steady and sizeable patient flow in the previous year. This increase represents a recognition on the part of ophthalmologists and other referral sources that the Center is providing a unique and much-needed program of comprehensive, individualized services for visually impaired individuals. These services--designed to maximize use of residual vision and thus to foster independent, productive lives within the mainstream of society--represent an exciting new alternative for the partially sighted. No longer need the clinicians tell their severely impaired patients that there is no more that can be done for them. There is now a central place for partially sighted persons to receive not only specialized optometric services but other crucial supplementary services that, together with the optometric services they receive here or elsewhere, encourage and enable them to function more independently relative to the visually demanding tasks that are important to them.

Data collected from Center patients and analyzed in this report demonstrate the overwhelming importance of partially sighted patients' self-perceptions relative to their functional ability and psychological well-being. The impact a person perceives a visual impairment to have on ability to function and live a happy life is shown to be as crucial in predicting actual functional ability as is visual acuity; moreover this perception is an even greater predictor of psychological well-being, as reflected in patients' subjective reports of quality of life and mood and morale. Demographic variables are shown to have little significant relationship to functional ability and psychological adjustment--a reassuring finding, since demographic variables are not amenable to change by this or any other center for the visually impaired. But the psychological factors shown to be significant in this report are amenable to change, and they are the basis of the comprehensive services offered by the Center for the Partially Sighted over these past two years.

The successful integration of a variety of treatment perspectives demonstrates the value of services designed to take into account the whole individual, to enhance the feeling of self-worth, and to encourage maximum use of functional capabilities including residual vision. The thorough case history ascertains which visual tasks are most problematic and most important to the partially sighted patient while establishing a data base for the purposes of research on the population and services rendered. Extensive low vision examinations have provided full assessments of patients' functional ability with specific respect to the tasks and environments perceived as important. The variety of visual aids prescribed far surpasses the range of aids in use by patients before their first visit to the Center, and careful training in the use of the aids has ensured that patients will be able to employ them to full advantage. In addition to the optometric foundation, other services work toward acceptance of the visual condition, ability to cope with problems posed by the visual loss, and facilitative self-perceptions. Orientation and mobility services encourage full independence, including ability to travel about alone. Psychological counseling in many forms helps partially sighted persons to make a difficult adjustment while retaining their sense of worth. Community referrals and activities sponsored by the Center help to motivate partially sighted persons, especially older persons, to make the most of the resources available to them. The Center's unique follow-up program offers an unprecedented means of continuing care and ascertaining what services are most valuable, and why. Regular case conferences attended by all staff who provide services to patients ensure that each patient is receiving an integrated program of services designed for his or her special needs while providing important staff multidisciplinary education.

During the reporting period (May 1979-March 1980) the optometric staff provided low vision examinations to 560 new patients, over 70 percent of whom were over 60 years of age, for a total of nearly 1500 patient appointments. This heavy patient load has posed a steady challenge to a limited staff eager to offer thorough, individualized low vision care, and has occasionally made for difficult decisions relative to the priority of clinical and/or research needs, especially on the frequent days when patients have been heavily scheduled. The pace of each examination, careful prescription of each visual aid with precise tasks in mind, thorough training in the use of all aids, and ongoing attentiveness to detect possible visual needs that may have gone unmentioned, have meant that low vision treatment is often difficult to limit to a time interval fixed in advance. But in spite of many problems it poses, the highly individualized, task-specific low vision examination so central to Center philosophy and services has been demonstrated to be well worthwhile. Rigorous analyses of the data it has produced show that patients' visual problems and functional abilities are grouped not just according to visual measurement but also according to functional domain; that is, that patients are apt to desire and/or be able to function well in tasks grouped according to their general purpose (e.g., independent living skills, general orientation, general mobility, illumination problems, household tasks, bus travel, recreational activities, and social perception). Center patients are not merely prescribed one aid for near-vision tasks and another device for distance-viewing. Rather, they experiment with, borrow, and are trained to use visual aids that are specifically prescribed for the tasks that are important to them. Patients are asked to bring to the Center any materials that are necessary for the tasks they want to perform, and they are loaned visual aids for a short period, so that we can ensure the appropriateness of an aid before the patient purchases it.

Data support the contention of Center staff that most partially sighted persons have not previously encountered or been trained to use many of the most useful visual aids. Among all the aids reported in use by patients at the time of their first visit to the Center, 42 percent were conventional spectacles or contact lenses, and 26 percent were hand-held magnifiers. In contrast, among the aids prescribed by the Center's low vision optometrists, only 10 percent were conventional spectacles or contact lenses, and only 8 percent were hand-held magnifiers. Whereas only 5 percent of the aids used by patients prior to their visits to the Center were distance-viewing aids, 9 percent of the aids prescribed by Center optometrists were for distance tasks. (Although an improvement, this 9 percent may still reflect a possible hesitancy on the part of many older partially sighted persons to attempt or to express mobility-related visual goals.) Forty percent of the distance-viewing aids were prescribed for persons under 20, reflecting the predominant concern of persons in this age group with mobility- and spectator-related goals. Fully 27 percent of the aids prescribed by Center optometrists were low-cost, effective non-optical aids, most of which patients had not used before. Overall, these comparisons illustrate the Center's tendency to consider a greater range of visual aids in prescribing for its patients' broad range of needs and goals. Given the fact that of the persons over 60 years of age, 84 percent live in one- or two-person households, and 54 percent of the women live alone, the Center's emphasis on the full range of tasks and skills necessary for independent functioning has been well placed.

Thus, while this careful treatment has made for occasional scheduling problems, difficult decisions, and long days, we are confident that the Center optometric staff has provided exceptionally thorough, task-specific, patient-centered low vision examinations. In the small subset of patients responding to the patient satisfaction questionnaire six months after their first visit to the Center, 88 percent agreed or strongly agreed with a statement expressing overall satisfaction with the visual care received at the Center. Patients have consistently expressed their thanks for careful examinations, for not feeling rushed, and for the genuine warmth of Center personnel. Given the demonstrated influence of psychological variables on functional status of visually impaired patients, we believe that our approach to the low vision examination is well worth the effort. In addition to providing these high-quality services, Center clinicians have also begun research plans that take advantage of this steady population of severely visually impaired patients, as well as sophisticated equipment for visual assessment and documentation.

The past year's increase in patients referred for orientation and mobility services reflects improved communication among staff members, in part due to the case conferences initiated in January 1980. Patients who have not lived in areas proximate to the Center have been referred to other agencies for orientation and mobility instruction (e.g., the California Department of Rehabilitation). As in the past, it is the patients with least residual vision who receive orientation and mobility instruction; these services are crucial for maintaining independence, especially for older patients. We are pleased to learn that age seems not to predict how well orientation and mobility services will fulfill a partially sighted persons's expectations; while age may in some cases limit the expectations, older patients have usually felt that they were able to perform at a level that satisfied them after receiving orientation and mobility instruction. And, as in the other arenas analyzed in this report, success in mobility goals is associated with patients' perceptions of themselves as sighted or blind. Individuals who see themselves as sighted have been found to achieve greater success with respect to their mobility goals.

It is here--in the area of encouraging and enabling a person to see himself or herself as a sighted individual--that the Center is able to offer crucial services, not just to the patients of its own optometric staff, but also to patients of other optometrists and agencies. The current year's psychological programs have operated at an increased level and more effectively than over the prior year. Referral protocols for the psychological staff and the process of psychological evaluation are being improved so that it should be possible to screen all incoming Center patients. The psychological evaluation has been refined so as to offer a standardized, behaviorally oriented assessment that promises wide-spread application potential. Short-term individual counseling has been provided to more patients over the past year; as with evaluation, a standardized behavioral approach has been implemented with good success. With the advent of case conferences, Center staff members hope to detect more patients who are in need of family counseling at a time when it is feasible to offer such counseling during the visual treatment program offered by the Center.

Transportation problems continue to limit the accessibility of counseling for many Center patients in need of such services, but future plans include training counselors in outlying areas to use the approach of Center psychologists at their own agencies. The three counseling groups--the open patient group, the group of working-age adults, and the group of parents of partially sighted children--have been maintained and have grown over the past year. Two new classes of peer counselors have been trained to greet and talk with patients as they wait for their appointments. A more focused training and a more concrete approach to peer-patient contacts have been implemented, and plans are now being made to train peer counselors in outlying areas using this model.

The community resource/outreach coordinator has worked closely with the optometric and psychological staff in order to make referrals that would enable patients to make the most of the resources available to them and to maintain active, productive lifestyles. Since the data collected have shown that patients are least satisfied with their ability to work, their health and personal safety, and their ability to read and participate in other leisure activities, the goal of community resource referrals is to provide an array of relevant information and alternatives regarding vocational, recreational, and independence-related goals. A full third of resource referrals (approximately 20) made each month encouraged patients, especially older patients, to take advantage of recreational and social activities. Among referrals related to social-service goals, many provided information about services that could encourage patients to maintain independence--for example, through counselor-teacher services of the Department of Rehabilitation. School placements and vocational services have been monitored so that patients would receive the benefit of a team approach from the Center and other agencies providing services at the same time. Center staff have given many presentations to groups of professionals and paraprofessionals in contact with the partially sighted, in order to educate these groups about the needs and capabilities of the population, and to encourage a team approach in providing for them. Brochures currently being written will be disseminated to all of these groups in the hope that the maximum number of partially sighted persons and service providers can benefit from the Center's experience. Such activities are consistent with our desire to supplement rather than to supplant other services currently available to the partially sighted in this area.

As to the patient population directly served by the Center, macular disorders, cataracts, and choroidal and retinal diseases account for more than 60 percent of the clinically diagnosed visual pathologies among Center patients. We are pleased that outreach efforts have resulted in a more representative distribution of patients among income and ethnic groups than was evident during the previous year. We have still not been able to serve partially sighted persons who are not legally blind (as opposed to partially sighted persons who are legally blind) in the proportion in which we believe they exist in the population. This imbalance may be due in part to the likelihood of ophthalmologists and optometrists feeling that they can serve such partially sighted persons directly, but it may also be due to a hesitancy on the part of such partially sighted persons to acknowledge their visual impairment and thus to seek services. Our data indicate that these partially sighted people represent a distinct group in terms of both functional abilities and psychosocial variables, and that although they are apt to function better than the partially sighted/legally blind in visually demanding tasks they encounter problems that are significantly alleviated by specialized visual aids. While we are pleased that our services are helping the more severely impaired who may be in greater need of comprehensive services, we hope to offer Center services to those who are less severely impaired as well. As would be expected on the basis of general statistics, relative to the age group that constitutes the bulk of our patient population, the Center has served more women than men. Since women are shown to be more functionally restricted by their visual impairments, Center staff has taken great care to see that our services address and alleviate these restrictions as much as possible.

Data show that virtually no patients report having received services designed to maximize use of residual vision before coming to this Center. Given the fact that the vision-related variables analyzed in this report are shown to have their strongest impact on the functional domain of independent living skills, timely intervention by low vision services like those offered at this Center are crucial for enabling persons to maintain independent lifestyles after onset of serious visual impairment.

APPENDIXES

A. Information and Consent Forms

1. Patient Information Form
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3. Informed Consent Form
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6. Outpatient Charge Voucher
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H. Optometric Protocols

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L. Spanish Translations

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N. Center Information Packet

O. Testimony to Santa Monica City Council

P. Sample Case Conference Notes

Q. Offsite Screenings-log

R. Low Vision Screening Form

A1. Patient Information Form

Good morning/afternoon, I'm_________. Before you see Dr.____________, I need to ask a few questions, explain the Center, the services we provide, and what you can anticipate today and on future visits. If you have any questions, feel free to interrupt me at any time.

The Center is a federally funded "model" clinic, which enables us to provide specialized low vision services while also conducting research about partially sighted persons. In order to gather this information, today and on your second visit we will ask you questions about your visual problems, how these problems affect your daily life, and other questions about your background. This takes about 45 minutes today, and only 20-30 minutes on the second visit.

All information you provide us is confidential and voluntary. You may choose not to answer any specific question or not to receive a specific service and your refusal will in no way affect the services you choose to receive. Also, federal law requires that after I explain the Center's procedures to you, you sign a consent form to indicate that you understand these procedures. Do you have any questions so far?

After I have finished with the questions today, you will see Dr.__________, who will begin your visual examination, which may include work with low vision aids. This will take about an hour today and will continue on your second visit after the second part of the questioning.

After your examination, either today or on a subsequent visit, you may be introduced to other members of our staff who provide important additional services, including orientation and mobility, referrals to community resources that may be of assistance to you, and individual, family, and group counseling. We do ask that each patient meet at least once with one of our counselors. We'll set up the meeting at a convenient time for you.

About six months from now we will call you to schedule an appointment for a staff member to visit you in your home, place of employment, school, or other site as appropriate, to see how well you have been getting along over the past six months by asking you more questions and observing you perform certain tasks that currently present you with visual difficulty.

This will help our counselor determine if you need additional training with your visual aids or if you possibly need a reevaluation. We will also ask how satisfied or dissatisfied you are with the services you have received from the Center. All information you provide us will help us evaluate and improve our services for partially sighted persons like yourself.

Because we are federally funded at this time, we are able to give services on a sliding scale fee schedule, based on your net income and your insurance coverage. Did you bring verification of your income? (Figure their percentage and tell them.) Visual aids that you may receive from the Center are not part of the sliding scale fee schedule, and we must charge the full price for them.

Any questions?

OK, please sign the consent form which, as I said, says you understand and agree to the Center's procedures. (Read it to them, if necessary.)

Next, I have three handouts to give to you to read or have someone read to you later. The first gives you more specific information about our services; the second and third give suggestions that we hope will make things easier for you.

(IF THE PATIENT HAS BEEN ACCOMPANIED BY SOMEONE, THE ACCOMPANYING INDIVIDUAL SHOULD BE TOLD THE FOLLOWING: During the first part of this interview, we welcome any assistance you can provide the patient in answering these questions. However, following these initial questions, a number of questions will be asked which can only be answered by the patient. Since the presence of someone else in the room may influence the way these questions are answered, we must ask that you leave the room for about 10 minutes when we reach that point in the interview.)

Now, let's begin.

A2. Detailed Explanation of Services

CENTER FOR THE PARTIALLY SIGHTED
Santa Monica Hospital Medical Center
1250 Sixteenth Street, Santa Monica, California 90404 (213) 451-1511, Ext. 2393

TO THE PATIENT

The Center for the Partially Sighted is a nonprofit multidisciplinary Center. The brochure you have received describes the various services the Center can provide for you.

We thank you for your willingness to participate in our Center for the Partially Sighted research project. The following is a list of the procedures and available services that you will encounter as a participant in this project. If you have any questions, please do not hesitate to ask them. Of course, you are free to withdraw from this program at any time and to refuse to participate in any procedure.

INTERVIEWS

Throughout your treatment at the Center, we will be asking you a series of questions about your experiences as a partially sighted person. Knowing more about the kinds of patients who come to the Center, the problems they face, and the goals they have will help us to serve you and other partially sighted persons more fully. Your responses will also help us to evaluate our services as a model project. If our evaluation shows positive results, the Department of Health, Education, and Welfare may decide to establish similar centers in other parts of the country to assist the more than two million visually impaired people in the U.S.

We are asking for your cooperation in filling out these forms. All information is kept strictly confidential. Future evaluation reports about the Center and its patients will in no way identify you. Your response to any of these questions is completely voluntary. You may choose not to answer any question, and those choices will in no way affect the services you receive here. However, it will be extremely helpful if you do choose to answer all the questions.

A COMPLETE LOW VISION EXAMINATION

This is a standard optometric exam, in which most of the procedures involve no risk at all, and, for those that do, the chance of complications is very remote.

(1) Visual acuity will be measured at long distances and at short distances with and without glasses, and with any low vision aids you are currently using or have used in the past. Risks: none.

(2) Refractive error will be assessed by retinoscopy and refined with trial lenses. Risks: none.

(3) Best visual acuity will be measured with various optical devices, including telescopic lenses, microscopic lenses, hand held or stand magnifiers, closed circuit television systems, pinholes, contact lenses, tinted lenses, and, when appropriate, combinations of the above. Risks: none.

(4) External eye examination. The outer eye surfaces and surrounding structures will be evaluated with a biomicroscope. Risks: none.

(5) Internal eye examination. The structure inside the eye (e.g., blood vessels, optic nerve, retina, lens, and fluid components) will be evaluated with an ophthalmoscope. In some cases the pupils may be dilated if an evaluation of the anterior chamber angle, measurement of eye pressure, and family history indicate that it is safe. In some cases a photograph will be taken of the back of the eye with a fundus camera. Risks: There is a very remote possibility of increasing pressure in the eye, but the doctor can detect this in the external eye examination.

(6) Tonometry. Intra-ocular pressure will be measured. This, along with additional tests, can be used to determine the presence or absence of glaucoma. Risks: On extremely rare occasions, minor corneal irritation may result.

(7) Amsler grid. Metamorphopsis (distortions in the central visual field) will be measured via the Amsler grid. This test is also used to detect small blind areas (scotomas) in the center of the visual field. Risks: none.

(8) Visual fields. Measurements will be made of peripheral (side) vision. A central target will be viewed and observations will be made as to when a second target appears and disappears. Risks: none.

(9) Visual evoked response. In some cases, evaluation will be made via visual evoked response (VER) and electroretinogram (ERG) equipment for a more accurate assessment, particularly with patients who are unable to report clearly and accurately regarding the quality of the image they see. Risks: none.

(10) Other measurements. Additional visual measurements may be made (e.g., measurements of color perception) that do not involve any risk at all.

INFORMATION AND REFERRAL

Patients will be referred to ophthalmologists and other medical help whenever appropriate.

TRAINING IN THE USE OF VISUAL AIDS

Our low vision specialists may recommend or prescribe visual aids that will enable patients to make maximum use of their remaining vision. Low vision assistants will work with patients in order to assure that they can make full use of these aids.

ENVIRONMENTAL ADJUSTMENT CONSULTATION

With patients' consent, personal environmental adjustment counselors will work with them in their home, work, or school situation to alleviate vision-related environmental barriers.

PSYCHOLOGICAL COUNSELING

Evaluation and individual and/or family counseling, under the direction of a licensed clinical psychologist, will be available.

ORIENTATION AND MOBILITY TRAINING

For those who need it, orientation and mobility training designed to meet the special needs of partially sighted people will be available.

GROUP MEETINGS

In addition, there are some special programs that you are welcome to use. There are no charges for these services.

Patients' Group

A patients' group meets every Thursday morning at the Center. In these meetings patients have the opportunity to discuss common concerns and issues affecting the partially sighted, and to share their experiences with one another. Relatives of patients are also welcome.

Meeting time: Thursdays, 10:30 a.m.

Working-Age Group

Patients of working age are invited to a monthly meeting to discuss issues related to employment and other concerns they may have.

Meeting time: Monthly on Saturday mornings from 9:30 - 11:30 AM.

Parents' Group

Parents of children who are patients at the Center are invited to a meeting held every other month to share experiences relative to raising partially sighted children, and to explore resources and programs available to their children.

Meeting time: First Monday of even-number months, 7:30 p.m.

Peer Counselors

Former patients who are partially sighted have been trained as peer counselors and are available to answer questions of current patients about the problems and possibilities involved in being a partially sighted person.

OTHER RESOURCES

If you would like information about resources to assist you with other needs, such as educational programs, vocational counseling and job placement, transportation, counseling and supportive services, benefits, and social and recreational activities, call Kathleen Davidson at the Center (451-1411, X 2393).

FEES

Patient fees for professional services are assessed on a sliding scale. Your position on that scale is determined by your net monthly income and the number of dependents. In many instances your medical insurance will cover a portion, if not all, of your obligation. Visual aids are not included in the above fee. We must charge for all visual aids at the price we pay plus a small handling charge.

CONSENT FORM

Federal law requires that you sign a consent form indicating your awareness of the Center procedures and acceptance of the services described above.

INFORMED CONSENT FORM
THE CENTER FOR THE PARTIALLY SIGHTED RESEARCH PROJECT
SANTA MONICA HOSPITAL MEDICAL CENTER
1250 16TH STREET
SANTA MONICA, CALIFORNIA 90404

I ______________________________ agree to participate in the Center for the Partially Sighted Research Project. I have received an explanation of the procedures that will be carried out by the Center.

I understand that the purpose of the Center is to provide a set of services that meet the particular needs of the partially sighted, and to carry on research aimed at gaining a better understanding of that population and improving its educational, vocational, and social opportunities. The results, procedures, examinations and interviews in which I am involved will be used for research purposes only. All information about me and my care will be kept confidential and will not be provided to anyone outside the research study except as required by law or as requested by me on the Center's release information form.

I understand that I may refuse to participate in any procedure or to accept any service offered; this will in no way affect my eligibility to receive any other service offered by the Center that does not involve a refused procedure. If I agree to accept services at this time, I

AM STILL FREE TO ALTER THIS DECISION AT ANY TIME IN THE FUTURE.

I, ____ UNDERSTAND AND AGREE TO ACCEPT THE SERVICES AS DESCRIBED ABOVE.

DATE ____________________________

FOR FURTHER INFORMATION CONTACT:

DR. SAMUEL M. GENENSKY
DIRECTOR, CENTER FOR THE PARTIALLY SIGHTED
SANTA MONICA HOSPITAL MEDICAL CENTER
1250 16TH STREET
SANTA MONICA, CALIFORNIA 90404

PHONE: (213) 451-1511
EXT. 2391

PARTIALLY SIGHTED CENTER
SANTA MONICA HOSPITAL MEDICAL CENTER
1225 15th Street, Santa Monica, California 90404

Release Form

I authorize the release of my Vision Records

To ____

Date ____________ Signed ______________________________

P.T.-810/SM-306 7/78

A5. Sliding-Scale Fee Description

A considerable amount of effort has gone toward plans and implementation for long-range funding of the Center. Up until January 1980 all services were free to the patient, the cost being underwritten by our grants from RSA/NIHR and AoA. (From the Center's inception of services, the patient has paid for the cost of low vision aids.) As of January 7, 1980, the Center implemented a sliding-scale fee schedule based upon the patients' ability to pay in terms of their net monthly income and number of dependents (see schedule below). Patients are required to bring verification of their monthly income on their first visit to the Center.

The total fees charged for services and low vision aids are considerably lower than those charged in private practice. The fee for a low vision evaluation is $125.00, which includes all optometric services for six months regardless of the number of visits to the Center for optometric services within that period. These services include the initial low vision examination and evaluation, all follow-up visits for additional testing, training in the use of low vision aids, the dispensing of those aids, orientation and mobility training, and the follow-up visit (approximately six months after the patient's first visit) at the patient's home, place of work, or school -- whichever is most appropriate. If the patient needs to return after the first six months, an additional $30.00 is charged.

This $125.00 fee does not include the cost of prescribed low vision aids (see Appendix H3) or individual or family psychological counseling sessions. The cost for one hour of private or family counseling is $45.00. The cost for visual aids is determined by the invoice amount plus a service charge which helps to cover the costs of ordering, receiving, and verifying these aids.

When the patients first come to the Center, they are required to register with the Outpatient Registration of the Santa Monica Hospital Medical Center (SMHMC). The patient (or an agent of the patient) is required to sign a financial agreement (see below) which indicates that the patient understands his/her liability for the total charge (or percentage as determined by the sliding scale) if there is no third-party payer such as Medicare, Medi-Cal, California Department of Rehabilitation, or other health insurance. If there is third-party coverage, patients are informed of their liability to pay for that percentage not covered by the third-party payer when appropriate (with Medi-Cal and California Department of Rehabilitation coverage, it is illegal to assess the patient the difference not covered by the payer.) However, it is the policy of SMHMC and the Center not to refuse services to persons because of their inability to pay. In those cases, the business office of SMHMC will negotiate with the patient on a case by case basis.

The situation is complex with third-party payers. Most insurance companies do not cover eye examinations or visual aids. Medicare will not pay for any optometric services performed by optometrists unless the patient is aphakic, and Medicare never covers the cost of low vision aids. Currently, Medi-Cal provides more coverage than Medicare. However, Medi-Cal payments are generally lower than customary fees.

An outpatient voucher is submitted to the business office after each patient visit to the Center. The voucher lists all services or aids received by the patient for that visit, the cost of those services and/or aids, and if applicable, the percentage of the cost for services as determined by the sliding-scale schedule. Low vision aids are not covered by the sliding-scale schedule. The business office of SMHMC is responsible for the processing of these forms, crediting the appropriate Center revenue account, and collecting on delinquent accounts.

The table below shows the gross amount for professional services that has been charged to either third-party payers or the patient as of March 31, 1980. The amounts do not reflect what has been in fact received, or what we expect to receive; the amounts are inflated with respect to the third-party payers since it is SMHMC policy to submit claims for the full amount for services.

TOTAL GROSS CHARGES OR REVENUES

January 1980 through March 1980

Charges to:	CPS Services	Low Vision Aids
Medicare	$ 8,590	$ 1,810
Medi-Cal	865	415
Blue Cross	260	61
Other Insurance	155	0
Self Pay	3,524	2,181*
TOTAL	$ 13,394	$ 4,467

*The Center has charged for low vision aids since inception of services. Until April 1980, revenues from low vision aids collected by the Center and submitted to SMHMC business office were credited to the low vision aid expense account. The $2,181 amount reflects only cash receipts for low vision aids presented directly to the business office. Both totals reflect billings from the SMHMC during the period January through March 1980. However, since the business office billing lag is generally about two months, these figures probably reflect patients seen by the Center during January only.

A5.(4)

your center for community health

CENTER FOR THE PARTIALLY SIGHTED - SLIDING FEE SCALE

NET INCOME MONTHLY	DEPENDENTS 1-2	3-4	5 or more
0-$400.00	10%	0	0
$401 - 550	20%	10%	10%
$551 - 700	50%	40%	30%
$701 - 800	80%	60%	50%
$801 - no limit	100%	100%	80%

Santa Monica Hospital Medical Center
1225 Fifteenth Street, Santa Monica, California 90404 (213) 451-1511 Santa Monica Hospital [illegible]

SANTA MONICA HOSPITAL MEDICAL CENTER
1225 15th STREET
SANTA MONICA, CALIFORNIA 90404

A6.

OUTPATIENT CHARGE VOUCHER

5/7

TIME IN

A CONTRACT NUMBER 22 27 DATE 28 32 REV CODE 33 34 INS CODE 35 37 AREA CODE 38 40 TELEPHONE NO 41 47 PATIENT 1st NAME 48 57 INITIAL 58 LAST NAME 59 72 SEX 77 **02** 79 80

B HEALTH INSURANCE NO 2 19 DATE OF BIRTH 28 33 DR NO 43 47 DR LAST NAME PATIENT ADDRESS

D GUARANTOR S ADDRESS 2 21 CITY, STATE 28 47 ZIP CODE 73 77 GUARANTOR S 1st NAME 48 57 INITIAL 58 LAST NAME 59 72

CIAL SECURITY NUMBER DRIVER'S LICENSE NO OTHER I D DATE OF ACC OTHER INSURANCE ADDRESS

TIENT OCCUPATION EMPLOYER ADDRESS PATIENT COMPLAINT

IARANTOR OCCUPATION EMPLOYER ADDRESS RELATIONSHIP

C CLERK DEPT CLERK DIAGNOSIS TEST CANCELLED DATE REASON

C C 1	DEPT. NUMBER 7-10	SERVICE CODE 11-15	SERVICE DESCRIPTION (26 CHARACTERS) 32-57	AMOUNT 16-21	LINE SEQ	C C 1	DEPT. NUMBER 7-10	ALLOWANCE GENERAL LEDGER 11-15	AMOUNT 16-21	C C 28
7					1	5				3
7					2	5				3
7					3	5				3
7					4	5				3
7					5	COMMENT ☐				
7					6	REMARKS				
7					7					
7					8					
7					9					
7					10					
7					11					
7					12					
7					13					
7					14					
7					15					
7					16					
7					17					
7					18					
7					19					

AYMENT	ADDITIONAL PAYMENT	REFUND	TOTAL PAID

3 O 8530

SANTA MONICA HOSPITAL MEDICAL CENTER
1225 FIFTEENTH STREET
SANTA MONICA, CALIFORNIA 90404

FINANCIAL AGREEMENT

THE UNDERSIGNED AGREES, WHETHER HE SIGNS AS PATIENT OR AS AGENT, THAT IN CONSIDERATION OF THE SERVICES TO BE RENDERED TO THE PATIENT, HE HEREBY INDIVIDUALLY OBLIGATES HIMSELF TO PAY THE ACCOUNT OF THE HOSPITAL IN ACCORDANCE WITH THE REGULAR RATES AND TERMS OF THE HOSPITAL. SHOULD THE ACCOUNT BE REFERRED FOR COLLECTION, THE UNDERSIGNED SHALL PAY REASONABLE ATTORNEY'S FEES AND COLLECTION EXPENSE. ALL DELINQUENT ACCOUNTS BEAR INTEREST AT THE LEGAL RATE.

IF WE HAVE AGREED TO BILL YOUR INSURANCE CARRIER, PLEASE BE ADVISED THAT THE SERVICES YOU ARE TO RECEIVE FROM THE CENTER FOR THE PARTIALLY SIGHTED MAY NOT BE COVERED UNDER THE TERMS OF YOUR POLICY.

THEREFORE FINANCIAL RESPONSIBILITY FOR TOTAL CHARGES LIES WITH THE PATIENT.

YOUR SIGNATURE ON THIS FORM INDICATES YOU HAVE BEEN NOTIFIED OF YOUR FINANCIAL LIABILITY AND THAT YOU HAVE READ OR HAVE HAD READ TO YOU AND UNDERSTAND THIS NOTICE.

PATIENT	DATE & TIME
WITNESS	DATE & TIME

I understand that the following services and/or visual aids are not covered under Medicare and/or Medi-Cal and agree to assume payment for these items.

1.______________________________

2.______________________________

3.______________________________

4.______________________________

Signature:____________________ Date:____________

TELEPHONE PROTOCOL

1. Determine eligibility by asking for referral source. If the referral is from an ophthalmologist, be sure to have the patient arrange for the (blue) referral letter. If the referral is not from one we normally accept (e.g., word of mouth, friend, newspaper article, etc.), explain to the patient and (if he/she agrees) schedule the person for a screening. There is no cost for the screening.

2. Determine the person's medical insurance: "Do you have medical insurance?" If yes, what is it? ______________________________.

3. EXPLAINING THE SLIDING SCALE FEES

   We have a sliding scale fee schedule that covers all services except low vision aids. The fee schedule is based on your ability to pay according to your net income and the number of dependents you are currently supporting. In order to verify your income, be sure to bring with you either:

   a. pay check stubs from your last two pay checks;

   b. last month's bank deposit statement or a photocopy of the checks;

   c. a copy of last year's income tax statement.

   The fee schedule will be explained in detail when you arrive; we do not deny services to people who are unable to pay.

   (IF THEY PERSIST AND ASK HOW MUCH $$$$)

   Your actual cost will depend on the services you receive and the low vision aids prescribed, and I won't know what that will be until you have seen the doctor, but if you will estimate your net monthly income and the number of dependents you are currently supporting, if any, I can tell you what percent you will be obligated to pay.

   (IF THEY STILL PERSIST AND ASK FOR THE $$$$)

   Let me give you an example: All of our patients receive at least a low vision evaluation. The fee for this service actually covers a six month period and includes the initial examination and all follow up visits for additional testing; it also includes the training in the use of low vision aids that may be prescribed for you and the dispensing of those aids; finally, at the end of the six months, a follow up visit to your home (work/school) will be made to see how well you are progressing. The fee for this six month low vision evaluation is $125. If your net monthly income is ____________ and the number of dependents is ______, then you would pay __________ and that's not counting what your insurance may cover.

4. Make appointment: name, age, phone numbers.

5. Advise re procedures:

Let me give you a brief explanation of what to expect on your first appointment. When you arrive, an intake interview will be given to explain our services, as well as to obtain some important information about you. This will take about 45 minutes. Following this you will receive a vision examination by one of our optometrists and, time permitting, you will speak to others of our professional staff.

6. OK?

I also want to ask you to bring with you any visual aids--glasses or magnifiers or whatever--that you have used, as well as the materials for any task that you are currently having difficulty doing because of your vision problem--material like sheet music, letters, etc. Remember to bring your verification of income.

Do you have any questions? Do you know where we're located? (Give directions to OPC, tell patient to arrive 20 minutes before appointment time, inform re parking). OK, then, we'll see you on ________at __________.

(IF THEY DON'T WANT TO SPEND SO MUCH TIME HERE)

I'm sorry, but our first appointments do require that much time. If you don't feel you have that much time right now, I can cancel the appointment. You should call your doctor (or other referral source) to advise him/her that you won't be coming here. We'll be happy to make an appointment for you whenever you do have the time.

B1. *CARD 14*

Patient Log

DOB (mo day yr) ☐☐☐☐☐☐ Sex (M F) ☐☐ I.D. No. ☐☐☐☐☐ 1-

Accompanied by: ____________________ Name: ____________________

Phones: ____________________ Phones: ____________________

Address: ____________________ Address: ____________________

Referred by:	Current Ophthalmologist	Current Optometrist

LVA:	DATE	AID PRESCRIBED	LVA DISPENSED	
1.	________ mo. day yr.	6 7 8 9 10	________ mo. day yr.	6-
2.	________	11 12 13 14 15	________	11-
3.	________	16 17 18 19 20	________	16-
4.	________	21 22 23 24 25	________	21-
5.	________	26 27 28 29 30	________	26-
6.	________	31 32 33 34 35	________	31-
7.	________	36 37 38 39 40	________	36-
8.	________	41 42 43 44 45	________	41-

LOANERS **DISP.** **RETURNED** *CARD 14* 79-

Additional sheets are available for further log entries.

CARD 15 1-5/ID

NAME: ____________________

1 APPT. DATE ____, ____, ____ APPT# 0 1 6-7/ ☐☐☐ P.yr. mo. 8-10/

2 APPT. DATE ____, ____, ____ APPT # 0 2 41-[illegible]/ ☐☐☐ P.yr. mo. 43-45/

SERVICES	N/A	Staff Initial	Time Spent	Purpose Code	Duration Code		N/A	Staff Initial	Time Spent	Purpose Code	Duration Code	
Case Histories I and II						11-15/						46-50/
Low Vision Exam						16-20/						51-55/
LVA Trn. or Disp.						21-25/						56-60/
VER/ERG						26-30/						61-65/
Psych. Screening						31-35/						66-70/
Comm. Referral						36-40/						71-75/

NEXT APPT.# 02 | Time Req.

____

____

____

CARD 15

79-[illegible]

NEXT APPT.# 03

____

____

____

CARD 16

1-5/ID

3 APPT. DATE ____, ____, ____ Staff seen ____________ APPT # ☐☐ 6-7/

☐☐☐ P.Yr. Mo. 8-10/

PURPOSE: ____________________ / ________ time spent ☐☐ 11-12/ ☐☐☐ 13-15/

NEXT.APPT. ____________________

____________________ / ________ time.req.

4 APPT. DATE ____, ____, ____ Staff seen ____________ APPT # ☐☐ 16-17/

☐☐☐ P.Yr. Mo. 18-20/

PURPOSE: ____________________ / ________ time spent ☐☐ 21-[illegible] ☐☐☐ 23-25/

NEXT APPT. ____________________

____________________ / ________ time req.

CARD 16 79-80/

B1.(3) Clinician's Log Sheet

CARD 07

Name ______________________________ 1-5/ID

BEST CORRECTED ACUITIES:

	OD	OS	
20/N (Extrapolate)-------►			6-13/
or Enter abbreviation------►			

C.F. L.PRO NLP NO EYE
H.M. L.PER PROS.

PATHOLOGIES:

1.	______________________		14-17/
2.	______________________		18-21/
3.	______________________		22-25/
4.	______________________		26-29/
5.	______________________		30-33/

Fields:	OD	OS	
Sup. Temp.			34-39/
Sup. Nasal			40-45/
Inf. Temp.			46-51/
Inf. Nasal			52-57/
Central			58-63/

CARD 07 79-80/

Treatment Goals:

CARD 08 1-5/

1.	______________________		6-9/
2.	______________________		10-13/
3.	______________________		14-17/
4.	______________________		18-21/
5.	______________________		22-25/

Patient's Attitude:

Very despondent 1-----2-----3-----4-----5 Very hopeful 26/

Patient's Expectations:

Very unrealistic (high) 1-----2-----3-----4-----5 Very accurate 27/

Prediction of Outcome:

1. Rehabilitation: 1-------2-------3 (poor fair good) 28/
2. Stability of eye condition: 1------2------3------4------5 (gets worse, stay same, gets better) 29/

CARD 01

Case History Part I

Case # ☐☐☐☐☐☐☐☐☐☐☐☐ 1-12/

Referral Source ____________________

☐☐ 13-14/

Date ☐☐ ☐☐ ☐☐ 15-20/

1. Name: ______________________________
(last name, first name, middle initial)

2. Date of Birth: ____________________ Age: ☐☐ 21-22/
(month, day, year)

3. Sex: __________

4. Occupation: ______________________________

5. Annual income: $ ____________ 6. # dependents ________ ☐☐ 23-24/

HEALTH AND VISUAL PATHOLOGY

7. When was your last appointment with your ophthalmologist/optometrist?

____________________ ☐☐☐☐ 25-28/
MO YR

8. What are your expectations and objectives in coming to the Center?
(Task oriented: PROBE AS NECESSARY)

______________________________ ☐☐☐☐ 29-32/

______________________________ ☐☐☐☐ 33-36/

9. CHIEF VISUAL COMPLAINT -- Describe your vision. How do things look to you?

____

______________________________ ☐☐ 37-38/

10. Are you certified legally blind?

YES.................................... 1 39/
NO..................................... 2
DON'T KNOW............................. 3

11. Describe the cause of your current visual disorders.

11.1 ______________________________ ☐☐ 40-41/
11.2 ______________________________ ☐☐ 42-43/
11.3 ______________________________ ☐☐ 44-45/
(COMMENTS)

CARD 01

12. When did the problem become functionally serious for you?

AGE ☐☐ 46-47/

13. Are you currently undergoing any medical treatment(s) for your eyes? (exclusive of visual aids)

YES...(GO TO 13.1)............ 1 48/
NO...(GO TO 14)............... 2

13.1 Describe treatment(s) ________________________________
____
____
________________________________ ☐☐☐☐ 49-52/

13.2 How helpful is this treatment?

VERY HELPFUL.................. 1 53/
SOMEWHAT HELPFUL.............. 2
NOT HELPFUL................... 3
DON'T KNOW 4

14. Describe any other past eye problems (excluding current eye problem.)
____
____
____
________________________________ ☐ 54/

14.1 Have you had any eye treatments in the past?
Describe ________________________________
____

15. Describe any eye problems of family members: ____________________
____
____
________________________________ ☐ 55/

16. Describe any past medical problems: ____________________
____
________________________________ ☐ 56/

17. Describe medical problems of family members: ____________________
____
____
________________________________ ☐ 57/

18. Are you currently taking any medications (including non-prescription drugs) or undergoing any medical treatments besides those related to your vision problem?

MEDICATIONS			TREATMENTS		
YES..........	1	58/	YES..........	1	59/
NO...........	2		NO...........	2	

18.1 (IF "YES" RESPONSE) Describe: ____________________

____

____

____________________ ☐☐ 60-61/

18.2 How helpful is this treatment?

VERY HELPFUL......................	1	62/
SOMEWHAT HELPFUL..................	2	
NOT HELPFUL.......................	3	
DON'T KNOW........................	4	

19. Do you have any allergies?

YES...............................	1	63/
NO................................	2	

19.1 (IF "YES" RESPONSE) Describe: ____________________

____________________ ☐ 64/

20. Are you now using any visual aids?

YES...(GO TO 21.1)................	1	65/
NO....(GO TO 22)..................	2	

INSTRUCTIONS FOR 21: RANK ORDER LVAs CURRENTLY IN USE STARTING WITH THE MOST USEFUL LVA AND PROCEEDING TO THE LEAST USEFUL. THEN, FOR EACH AID, USE THE CODES NOTED TO INDICATE LVA TRAINING, FREQUENCY OF USE, AND HOW WELL THE LVA MEETS PATIENT NEEDS.

CARD 01 *79-80/*

21. PROBE (including eyeglasses, sunglasses, magnifiers, binoculars at theater, etc.)

LVAs Rank Ordered	LVA CODES	RECEIVED TRAINING 1 = yes 2 = no	HOW OFTEN USED 1 = frequently 2 = sometimes 3 = rarely	HOW HELPFUL WHEN YOU USE IT 1 = very helpful 2 = helpful 3 = not very helpful
21.1 ______	☐☐☐☐☐	☐	☐	☐
21.2 ______	☐☐☐☐☐	☐	☐	☐
21.3 ______	☐☐☐☐☐	☐	☐	☐
21.4 ______	☐☐☐☐☐	☐	☐	☐
21.5 ______	☐☐☐☐☐	☐	☐	☐
21.6 ______	☐☐☐☐☐	☐	☐	☐

22. DO YOU CURRENTLY USE A WHITE CANE?

YES 1
NO.............................. 2

23. VEAPs

INTRODUCTION TO BE READ TO THE RESPONDENT:

Right now I am going to read to you a list of activities that you may have difficulty doing by yourself because of your visual impairment. Please tell me whether you have difficulties with each activity and whether you currently use an aid for that activity. Remember, we are concerned only with those activities that because of your visual impairment you either do with difficulty or don't do at all without someone else's help. Do you have any questions? Let's begin...

> *PLEASE REMEMBER: KEEP THE PATIENT ON TRACK WITH PROBLEMS/DIFFICULTIES DUE TO VISION ONLY!*

To record a VEAP use the following key:
1 = no problem
2 = problem
3 = doesn't do

THEN: If 1 or 2, specify LVA used (from 21 (1-6)) and proceed to next probe. (NOTE: This should be asked only if aids are listed under 21.)

If 3, ask: "Would you like to be able to do this activity yourself if a means could be found to help you?" (1 = yes; 2 = no). If respondent indicates reason other than vision for not doing activity, place a 1 in NON-VIS PROB column. Proceed to next probe.

23. VEAP PROBES (cont.)

** These items should be prefaced by asking if they do the activity alone.
Lead in phrase, use as necessary: "DO YOU HAVE VISUAL PROBLEMS..."

	VEAP	USES AID	WOULD DO	NON VIS PROB	
with recognizing familiar faces across the street? How close does someone have to be to recognize facial features? Distance___ feet					55-58/
with being a spectator at sporting events, movies, or the theater?					59-62
with participating in physical activities such as jogging, swimming, bowling, dancing, golf, shuffleboard or other sports?					63-66/
with walking about alone ?					67-70/
with seeing oncoming traffic?					71-74/
with seeing traffic signals?					75-78/
				CARD 02	79-80/
				CARD 03	1-5/(ID)
with bus travel such as finding the right stop?					6-9/
with determining the number of the oncoming bus?					10-13/
with locating the appropriate restroom in an unfamiliar building?					14-17/
with using elevators?					18-21/
with locating an office in an unfamiliar building?					22-25/
with going upstairs?					26-29/
with going downstairs?					30-33/
with household chores such as vacuuming, sweeping, washing windows, or dishes?					34-37/
with preparing foods? (For example, determining when foods are done, regulating the stove or oven, or measuring ingredients)					38-41/
with shopping in general? (For example, locating items and determining food prices)					42-45/
with hobbies such as collecting, painting, weaving, crocheting, playing cards, checkers, or chess?					46-49/

23. VEAP PROBES (Cont.) *CARD 03*

Lead in phrase, use as necessary: "DO YOU HAVE VISUAL PROBLEMS..."

		VEAP	USES AID	WOULD DO	NON VIS PROB	
6201	with watching TV? Viewing distance_____ TV screen size____B&W or Color					*50-53/*
5101	with reading facial expressions?					*54-57/*
5420	with meeting new people and developing close relationships?					*58-61/*
2101	with grooming, for example, combing your hair, cutting nails, applying makeup, or shaving?					*62-65/*
1102	with taking medication, reading medicine labels, or a thermometer?					*66-69/*
1101	with reading headlines, large print, or standard print, (CIRCLE SMALLEST); letters, bills, or other mail?					*70-73/*
1110	with writing checks or letters?					*74-77/*
					CARD 03	*79-80/*
					CARD 04	*1-5/(ID)*
1121	with using the telephone?					*6-9/*
1120	with distinguishing different denominations of money?					*10-13/*
4401	with going from bright to dim area?					*14-17/*
4402	with going from dim to bright area?					*18-21/*
4403	with seeing at night?					*22-25/*
4404	with glare or bright lights?					*26-29/*
DO YOU DRIVE?	If "yes" ask 3390; if "no" code 3					
3390	with driving a car?					*30-33/*

24. Before your visual problem became serious, did you do much reading?

YES...(GO TO Q.24.1).......... 1 *34/*

NO........................... 2

24.1 Did you read:

	Yes	No	
The newspaper?...................	1	2	*35/*
Magazines?.......................	1	2	*36/*
Books?...........................	1	2	*37/*
Other?...........................	1	2	*38/*

(AT THIS POINT ANYONE ACCOMPANYING THE PATIENT MUST BE ASKED TO LEAVE THE ROOM.)

We are interested in knowing to what degree each of the following questions applies to the way you have felt during the past month. You may be assured that your responses will be held in the strictest confidence. Now, I'm going to read each question to you and I would like you to tell me whether during the past month you have felt this way none of the time, hardly ever, sometimes, most of the time, or all of the time.

	None of the time	Hardly ever	Sometimes	Most of the time	All of the time	
How often over the past month have you been anxious, worried, or upset?	5	4	3	2	1	39/
How often over the past month has your daily life been full of things that were interesting to you?	5	4	3	2	1	40/
How often over the past month have you been in firm control of your behavior, thoughts, emotions, or feelings?	5	4	3	2	1	41/
How often over the past month have you been feeling emotionally stable and sure of yourself?	5	4	3	2	1	42/
How often over the past month have you been under or felt you were under any strain, stress, or pressure?	5	4	3	2	1	43/
How often over the past month have you been happy, satisfied, or pleased with your personal life?	5	4	3	2	1	44/
How often over the past month have you been bothered by nervousness or your "nerves"?	5	4	3	2	1	45/
How often over the past month have you felt down-hearted and blue?	5	4	3	2	1	46/
How often over the past month have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile?	5	4	3	2	1	47/

For this next question we would like to know on a scale from 1 to 5 how depressed or cheerful you have been over the past month, where 1 equals "very depressed," 3 equals "so-so" and 5 equals "very cheerful."

1------2------3------4------5 48/

CARD 04

EXPECTATIONS

1. In relation to most people your age, would you say your general physical condition is (not including your eye condition)?

healthier than average........... 1
about average, or................ 2 49/
worse than average?.............. 3

2. As you think ahead to the future, what do you expect will happen with your health - your general physical condition (not including your eye condition)? Will it:

get better,...................... 1 50/
stay the same, or................ 2
get worse?....................... 3
DON'T KNOW....................... 4

3. Thinking specifically about your visual problem, what do you expect? Will it

get better,...................... 1 51/
stay the same, or................ 2
get worse?....................... 3
DON'T KNOW....................... 4

4. Right now, how much of a problem is your vision for you in your daily life?

Makes daily living impossible.... 1 52/
Makes lots of problems for me.... 2
Makes some problems for me....... 3
It's just an inconvenience....... 4
It's no problem.................. 5

5. Given that you have a visual problem, in your opinion, how much does it affect your ability to lead a good happy life?

Makes it impossible.............. 1 53/
Makes it difficult............... 2
It interferes somewhat........... 3
It interferes a little........... 4
It has no effect................. 5

6. Considering your situation at the present, what if anything would you say is missing from your life? What do you miss most?

____

☐☐☐ 54-56/

CARD 04 79-80/

Part II

CARD 05

1-5/(ID)

DEMOGRAPHICS

1. Living arrangement:	Lives alone	1	6/
	Lives with others:		
	Spouse	2	
	Other relative	3	
	Non-relative	4	
	Number in household	☐☐	7-8/
2. Type of residence:	Owner occupied house, condo, or apt	1	9/
	Rented single family dwelling	2	
	Rented apartment	3	
	Boarding, retirement, or nursing home	4	
	Other	5	
3. What is your ethnic background?	Black/Negro/Afro-American	1	10/
	Hispanic/Puerto Rican/Cuban/Mexican/Latin	2	
	White/Caucasian	3	
	Oriental/Asian/Chinese/Japanese/Korean/Filipino	4	
	Other	5	
	Specify ________________________		
4. Education (excluding education for the blind or partially sighted)	Highest grade completed (no formal schooling = 00)	☐☐	11-12/
	Highest degree:		
	High school/GED	1	13/
	AA	2	
	BA, BS, RN, etc	3	
	MA, MS, etc	4	
	MD, PhD, LLB, JD, etc	5	

5. As part of your education (exclusive of vocational training) did you receive any specialized training for the partially sighted or for the functionally blind?

YES...(GO TO 5.1)	1	14/
NO...(GO TO 6.)	2	

5.1 Did you receive this training in:
(COMPLETE AS MANY AS APPLY)

	YEARS	
a) a regular classroom with help from VH teacher	☐☐	15-16/
b) a VH class or resource room	☐☐	17-18/
c) a residential school for the partially sighted or the blind	☐☐	19-20/

CARD 05

6. Have you had any vocational/skill or on the job training?

YES.........(GO TO 6.1)............... 1 *21/*
NO..........(GO TO 7)................. 2

6.1 In what field did you receive this specialized training? Was it regular training, training for the partially sighted, or training for the blind?

	Setting for training			
	regular	partially sighted	functionally blind	
Professional and Technical Specify:__________	1	2	3	*22/*
Managerial and Administrative Specify:__________	1	2	3	*23/*
Sales and Clerical Specify:__________	1	2	3	*24/*
Craftsmen and Operatives Specify:__________	1	2	3	*25/*
Laborers and Service Workers Specify:__________	1	2	3	*26/*

6.2 At the end of training, was a diploma or certificate issued?

YES.................................. 1 *27/*
Specify____________________
NO................................... 2

6.3 Was this training instrumental in obtaining future employment?

YES.................................. 1 *28/*
NO................................... 2

6.4 What type of partially sighted or blind training did you receive in either setting (educational or vocational training)?

CIRCLE AS MANY AS APPLY.

1) Braille................................. 1 *29/*
2) Cane travel with blindfold.............. 1 *30/*
3) Cane travel without blindfold........... 1 *31/*
4) Guide dog with blindfold................ 1 *32/*
5) Guide dog without blindfold............. 1 *33/*
6) Mobility training using visual skills..... 1 *34/*
7) Home independent living skills (cooking, cleaning, sewing, etc.)................. 1 *35/*
8) Closed circuit TV....................... 1 *36/*
9) Portable low vision aids................ 1 *37/*
10) Large print books...................... 1 *38/*
11) Eccentric fixation..................... 1 *39/*
12) Other.................................. 1 *40/*

CARD 05

7.	Employment:	Working full-time (30 or more hrs/wk)	1	41/
		Working part-time (less than 30 hrs/wk)	2	
		Student	3	
		Unemployed	4	
		Housewife	5	
7.1	If unemployed, are you:	Looking for work	1	42/
		Voluntarily unemployed	2	
		Unable to work (disabled)	3	
		Retired	4	
		Volunteer Work	5	

8. What is your present occupation? If unemployed, what was your previous occupation? Describe:____

____

Professional and Technical	1	43/
Managerial and Administrative	2	
Sales and Clerical	3	
Draftsmen and Operatives	4	
Laborers and Service workers	5	

ASK Q9 ONLY IF NO ANNUAL INCOME RECORDED IN Q5; PART I.

9. Estimate gross annual income (income before taxes) for this year for yourself [and your spouse]. (See Sec. 1 question #5.)

Less than $3000	1	44/
3000 to 4900	2	
5000 to 6900	3	
7000 to 9999	4	
10,000 to 19,999	5	
20,000 to 49,999	6	
More than 50,000	7	

(AT THIS POINT ANYONE ACCOMPANYING THE PATIENT MUST BE ASKED TO LEAVE THE ROOM.)

CARD 05

10. I am going to read you a list of terms, and I want you to tell me whether you think each word describes you very well, a little, or not at all. Just give me the fist response that comes to mind, and we can go through this list quickly. Ready? Okay. [Write 1 next to each word for which respondent says very well, 2 next to each word for which an "a little" response is given, and a 3 next to each word for which a "not at all" response is given.]

Competent ______ *45/*
Intelligent ______ *46/*
Capable ______ *47/*
Nervous ______ *48/*
Bad tempered ______ *49/*

Easily upset ______ *50/*
Slow ______ *51/*
Confident ______ *52/*
Happy ______ *53/*
Useless ______ *54/*

Contented ______ *55/*
Strong ______ *56/*
Afraid ______ *57/*
Lonely ______ *58/*
Easy-going ______ *59/*

Well-liked ______ *60/*
Gentle ______ *61/*
Kind ______ *62/*
Negative ______ *63/*
Alert ______ *64/*

Weak ______ *65/*
Inadequate ______ *66/*
Agreeable ______ *67/*
Considerate ______ *68/*
Sickly ______ *69/*
Mean ______ *70/*

Nice ______ *71/*
Sad ______ *72/*
Unfriendly ______ *73/*
Hostile ______ *74/*
Understanding ______ *75/*
Irritable ______ *76/*

CARD 05 *79-80*

11. The next group of phrases I'm going to read are all terms that have been used to describe people with visual problems. For each one, tell me whether it applies to you. Say yes or no. (1 = yes) (2 = no)

CARD 06 *1-5/(ID*

Visually handicapped ______ *6/*
Visually impaired ______ *7/*
Visually disabled ______ *8/*
Legally blind ______ *9/*

Partially sighted ______ *10/*
Poor eyesight ______ *11/*
Low vision ______ *12/*
Blind ______ *13/*

A. Of all those phrases, which one would you most prefer to describe yourself? ____________________ ☐☐ *14-15/*

B. Which one do you like least? ____________________ ☐☐ *16-17/*

12. (ASK ONLY OF THOSE PATIENTS 60 OR OLDER) Now I'll read you some terms used to describe persons over 60. Again I'd like you to tell me whether the term applies to you.

Senior citizen ______ *18/*
Elderly ______ *20/*
Old ______ *22/*

Older adult ______ *19/*
Oldster ______ *21/*
Senior ______ *23/*

A. Of all those phrases, which one would you most prefer to describe yourself? ____________________ ☐☐ *24-25/*

B. Which one do you like least? ____________________ ☐☐ *26-27/*

C. Is there any other word or phrase that you personally would like better? ____________________ ☐☐ *28-29/*

13. I'm going to read to you a series of items that concern different aspects of your life. For each one I'm going to ask you the question, "At this time in your life, how important to you is (the item)?" I would like you to tell me if it is very important, somewhat important, or not very important. In addition, if it is very important or somewhat important, I'm going to ask you the question, "How satisfied are you in regard to this area of your life?" I would like for you to tell me if you are very satisfied, somewhat satisfied, or not very satisfied. Okay, let's begin with an example. (ASK SATISFACTION ITEM ONLY IF ITEM IS VERY IMPORTANT OR SOMEWHAT IMPORTANT.)

At this time in your life, how important to you is transportation - things like bus service, dependable car?

How satisfied are you in regard to transportation?

Do you have any questions?

Very Important	Somewhat Important	Not very Important
Very Satisfied	Somewhat Satisfied	Not very Satisfied

Item	At this time in your life, how important to you is/are...			How satisfied are you in regard to this?			
	Very Important	Somewhat Important	Not very Important	Very Satisfied	Somewhat Satisfied	Not very Satisfied	
Physical and material well-being							
A. Material comforts -- things like a desirable home, good food, a good income.	3	2	1	3	2	1	30-31/
B. Health and personal safety -- to be physically fit, to be free from anxiety, and to feel safe.	3	2	1	3	2	1	32-33/
C. Getting effective treatment for health problems.	3	2	1	3	2	1	34-35/
Relations with other people							
D. Relationships with your children, parents, brothers, sisters, and other relatives -- things like communicating, doing things with them, and helping each other.	3	2	1	3	2	1	36-37/
E. Close relationship with a husband/wife or a relationship like that.	3	2	1	3	2	1	38-39/
F. Close friends -- sharing activities and interests, being accepted, and caring about each other.	3	2	1	3	2	1	40-41/

CARD 06

	At this time in your life, how important to you is/are...?			How satisfied are you in regard to this?			
	Very Important	Somewhat Important	Not Very Important	Very Satisfied	Somewhat Satisfied	Not Very Satisfied	
Social, community, and civic activities							
G. Helping and encouraging people other than relatives or close friends. These can be through your own efforts or efforts as a member of some organization.	3	2	1	3	2	1	42-43/
H. Participaton in activities relating to government and public affairs.	3	2	1	3	2	1	44-45/
Personal development and fulfillment							
I. Learning. Taking classes or getting additional knowledge or understanding.	3	2	1	3	2	1	46-47/
J. Understanding yourself and knowing your assets and limitations. This may include religious, spiritual, or philosophical attitudes.	3	2	1	3	2	1	48-49/
K. Work in a job or at home that is interesting, rewarding, worthwhile.	3	2	1	3	2	1	50-51/
L. Expressing yourself in a creative manner in music, art, crafts, or in leisuretime activities.	3	2	1	3	2	1	52-53/
Recreation							
M. Socializing -- meeting other people, doing things with them, giving or attending parties.	3	2	1	3	2	1	54-55/
N. Reading, listening to music, or observing sporting events or entertainment.	3	2	1	3	2	1	56-57/
O. Participation in active recreation such as sports, traveling, or any other exervise.	3	2	1	3	2	1	58-59/

(CARD 06) 79-80/

B4. Patient Flow

Following is a step-by-step description of the procedures followed with patients at the Center, broken down into initial visits, second visits, and subsequent visits.

I. Initial Visits

A. Patient calls the Center for an appointment. The receptionist determines if the request is appropriate. (If the patient is being referred by an ophthalmologist, optometrist, the Braille Institute, the Department of Vocational Rehabilitation or a similar organization known to give appropriate referrals, the referral is sufficient; however, if this is a self-referral, or a referral from an organization other than those mentioned above, then a screening is set up to determine if the patient is eligible for Center services.)

B. The patient registers with the Outpatient Registration (OPC) of the Santa Monica Hospital Medical Center (SMHMC), signs the financial agreement, and receives the outpatient voucher. The patient is then escorted to the Center by a hospital volunteer, if necessary.

C.. The patient checks in with the Center's receptionist. The receptionist is responsible for initiaiting the patient's case file and log sheet. The receptionist then directs the patient to the waiting area and notifies either the low vision assistant or coordinator of clinical services that the patient is here and ready to be seen for intake and administration of Part I of the case history. (For practical purposes, the coordinator will be referred to as a low vision assistant in this description of patient flow.)

D. The staff person assigned to administer the case history introduces her/himself to the patient, and takes the patient to a private room. The staff person explains the Center's purpose and procedures, has the patient sign the informed consent form, gives the patient the detailed explanation of services and household hints, determines the percentage of the sliding-scale fee schedule, and proceeds to administer Part I of the case history. (Only the first part of the case history is done because of its length, and Part II is done on the second visit.) These procedures usually require 30 and 45 minutes to complete.

Afterwards the patient is shown to the appropriate examining room for the low vision evaluation. The staff person takes the file to the assigned low vision specialist. The low vision specialist may ask a low vision assistant to perform certain measurements (e.g., verifying lenses, taking distance acuities), prior to the evaluation.

E. The low vision specialist initiates a low vision evaluation, including prescription of low vision aids when appropriate. In most cases, the evaluation and prescription of low vision aids are not completed until the second patient visit.

F. The low vision specialist initiates training in the use of low vision aids (usually during the second visit), and if further training is required one of the assistants takes over under the doctor's supervision, notes the progress in the patient's file and log sheet, and verbally informs the attending doctor. Training, depending on the patient and the aid(s) involved, may entail a number of subsequent visits to the Center. Each service rendered or aid prescribed is noted on the patient log and case file.

G. Referral of the patient to other service modalities of the Center is accomplished in either of two ways. The low vision specialist may recommend the patient directly to the appropriate service provider for psychological counseling, orientation and mobility training, or for referral to other community resources not provided by the Center. Second, referral for other Center services may occur during a case conference on the particular patient. Depending on the Center's schedule and availability of appropriate Center staff, a case conference is scheduled as soon as possible after a patient's first visit to the Center. The other service providers either arrange to see the patient on the day the referral is made (assuming the patient is at the Center), or alert the receptionist that an appointment should be set up for the patient. Scheduling is complex, given the variable time commitments of some of the Center staff.

H. Each staff member who sees a patient is responsible for completing the outpatient registration voucher and the log sheet, and entering summary notes on the patient's case file.

I. If another appointment is to be set up, the patient is directed to the receptionist. If patients are not covered by Medi-Cal or the Department of Vocational Rehabilitation, they are escorted back to outpatient registration to arrange for payment of services or aids for which a charge has been assessed. SMHMC bills the payers noted above. If the patient is covered by one of those payers, or if no charge was assessed for that visit, the patient leaves the Center.

J. Visual Aid Procedure

(1) If an aid is dispensed, the name of the aid, its code, and the date are entered on the front of the log sheet in the space provided. The name of the aid and the date dispensed are also entered on the prescription recommendation form.

(2) If an aid needs to be ordered that is specially made for the patient (e.g., Rx, telescope, microscope), the aid and its code are entered on the front of the log sheet and the name of the aid and all necessary information for ordering are entered on the prescription recommendation form. The patient's

file and log sheet are placed in the low vision administrative assistant's office in the top "hot file".

(3) If an aid which is usually in stock (e.g., magnifier, NoIR), needs to be ordered for a patient, all information is recorded as in J(2) above, but only the log sheet is placed in the "hot file".

(4) If a visual aid is dispensed as a loaner, the aid and the date are entered on the appropriate space on the patient's log sheet, and in the loaner log located in the training room.

K. Special Procedure for School-Age Patients: Files of patients who are 18 years old or younger should be put in the training room on either assistant's desk. She/he will see that it is refiled or put into the "hot file," whichever is appropriate. The assistant makes certain that school reports are initiated and kept current for each child. If a child is not in school yet, the assistant will make sure that a school report is done when the child enters school. This ensures that children are in the right placement at school.

II. Second Visits

A. If the patient has previously registered with the outpatient registration,the patient comes directly to the Center and checks in with the Center's receptionist. (If not, the patient follow directions in I(B).) The receptionist initiates the outpatient voucher, directs the patient to the waiting area, and notifies the staff member who will administer the second (Part II of the) case history.

B. The staff member doing Part II of the case history introduces him/ herself to the patient and completes Part II.

C. The low vision specialist or assistant continues the low vision evaluation and/or training as listed in I(F) above. If service with another modality has been scheduled, the appropriate staff member is notified when the patient is ready. If the patient requires a third visit (to any of the modalities), the purpose for and time required are noted on the log. The patient is escorted to the receptionist to make the third appointment.

D. All other procedures are the same.

III. Subsequent Visits

All procedures for subsequent visits are the same, except that there will be no case history taken on those visits.

C1. Low Vision Examination Form

NAME: ______________________________ DATE: ________________

I. Etiology

Opthalmologist

Prognosis (Stability)
Treatment
Attitude seems: overexpectant ____ hopeful ____ skeptical ____ resigned ____ despondent ____
Other ______________

II. V.A.	$\overline{sc}$	SR_x VA $\overline{cc}$	Refraction VA	PH VA
OD				
OS				

III. Near Vision

Illumination

IV. Present Low Vision Aids ____

____

____

V. EOM

VI. External

Pupils

Media

VII. Internal

VIII. Tonometry

B.P.

IX. Amsler Grid

X. Fields

XI. Color Testing

XII. Aids

PRESCRIPTION RECOMMENDATIONS

Name: ______________________________

	DATE ORDERED	DATE DISPENSED

C2.(2)

CARD NO. ______

SUPPLEMENTAL OR TREATMENT NOTES

Name______________________ Phone________________ Address______________________

Date	

CPS

CENTER FOR THE PARTIALLY SIGHTED

Santa Monica Hospital Medical Center

1250 Sixteenth Street, Santa Monica, California 90404 (213) 451-1511, Ext. 2393

REQUEST FOR SERVICES

I request that the Center for the Partially Sighted provide

____

Patient's Name

With the following services:

☐ Any and all services provided by the Center for the Partially Sighted and considered by it to be appropriate in helping this patient to use his/her residual vision to function successfully in society.

☐ A complete low vision evaluation, the prescription of aids, and training in the use of the aids.

☐ Individual, group, or family psychological counseling to help the patient accept his/her visual status to enter, reenter, or remain within the mainstream of fully sighted society.

☐ Orientation and mobility training to help the patient move about safely and with confidence in both external and internal environments.

☐ Counseling concerning partial sightedness, the value of remaining sensory capabilities including residual vision, and advice and suggestions that will help the patient to utilize all sensory capabilities.

☐ Direction to educational, vocational, social, and recreational opportunities that could prove of value to the patient in his/her attempt to function effectively within the framework of fully sighted society.

☐ Other ____

____

____________ Date

________________________ Signature

C3.(2) Report Form to Referring Ophthalmologist/Optometrist

Dear Dr. ____________________

_________________________, age ____, was first seen at the Center for the Partially Sighted, __________, 1979.

His/Her presenting complaint was ____. His/her chief objectives were ____. The patient is partially sighted due to ______________________________________.

Clinical Findings.

Visual Acuity:

Unaided: O.D. ______________________________

O.S. ______________________________

With present Rx:

O.D. ______________________________

O.S. ______________________________

A ______________________________ improves this to:

O.D. ______________________________

O.S. ______________________________

Near vision through present Rx:

O.D. ______________________________

O.S. ______________________________

This can be improved to:

O.D. ______________________________

O.S. ______________________________

Color Testing:

Visual Field: O.D. ______________________________

O.S. ______________________________

Amsler Grid: O.D. ______________________________

O.S. ______________________________

Action was taken as follows:

__________________________ has been directed to return to you for further medical attention as required.

Thank you for the referral.

Sincerely,

Low Vision Specialist
Center for the Partially Sighted

(Enclosure??)

C4. Certification of Legal Blindness

DEAR ____

The purpose of this letter is to certify "legal blindness." You were seen at the Center for the Partially Sighted on _________________________.

The following history was obtained:

Diagnosis: ____

Visual Acuity: Right Eye ____

Left Eye ____

Prognosis: It is (not) expected ___________________'s vision will improve.

As central visual acuity cannot be improved to better than ________________, _________________________________ is legally blind and is entitled to the additional income tax exemption for legal blindness.

Sincerely,

H. Theresa Porter, O.D.
Low Vision Specialist
Center for the Partially Sighted

SCHOOL INFORMATION

) BE COMPLETED DURING
RST CASE HISTORY:

TIENT________________________________ GRADE ____________

HOOL: Name of School________________________________

Address________________________________

District________________________________

ACHER(S): Regular Classroom Teacher________________________

VH Teacher (Resource or Itinerant?)____________________

O/M Instructor____________________________

Other________________________________

E.P.: (What is your child's individual educational plan? Break down as follows:)

How much time is spent in the regular classroom?

How much time is spent in a VH resource room?

How much time is spent with a VH itinerant teacher?

How much time is spent with an Orientation and Mobility instructor?

Other special services?

BE COMPLETED BY LOW VISION OPTOMETRIST:

at is your assessment of this child's educational placement? If you recommend any
anges, what are they? (If so, notify Kathleen)

v do the parents feel about the educational placement? How do they respond to any
anges you think advisable?

rther activity:

TO THE TEACHER:

Your student ____________________ was examined by Dr. ______________, a low vision specialist at the Center for the Partially Sighted, on ____________. The student should be using the visual aid described below.

To be sure that the prescribed aid is appropriate and that the student is using it correctly, we would appreciate your completing the enclosed form after a ______ ______ trial of the device in the classroom. Send the form to: Center for the Partially Sighted, Santa Monica Hospital Medical Center, 1225 Fifteenth Street, Santa Monica, CA 90494, to the attention of the student's doctor.

If the student should discontinue using the device, or should break or lose it, please notify the doctor immediately at (213) 451-1511, ext. 2393.

Your comments will be appreciated at any time and will be an integral part of the student's visual rehabilitation.

PRESCRIBED AID:

DESCRIPTION:

WORKING DISTANCE:

WHEN USED:

SPECIAL PLACEMENT IN CLASSROOM:

LIMITATIONS:

For your information, the student's visual acuities and fields have been measured as follows:

VISUAL ACUITY:	Right	Left	Both
Distance:			
Uncorrected:			
Best corrected:			
Near:			

VISUAL FIELD:

Center for the Partially Sighted
Santa Monica Hospital Medical Center
1225 Fifteenth Street
Santa Monica, CA 90404

STUDENT: ______________________ DR. ______________

TEACHER: ______________________ PHONE ______________

SCHOOL: ______________ DISTRICT ______________

DATE: ______________

Is the student using the device?

At what distance is the student using the device?

Does the student complain of inadequate lighting?

Is the device being kept clean and in good working order?

Is the student motivated to use the device, or must he/she be constantly reminded to use it?

What is the student's attitude toward school work?

Are there other contributing problems interfering with the student's ability to learn?

What is your assessment of the student's motivation to learn?

What is the student's reaction to the device?

What are peers' reactions to the student and the device?

In your opinion, is the student benefiting from the device? Please comment.

CONFIDENTIAL EYE REPORT FOR CHILDREN WITH VISUAL PROBLEMS

NAME OF PUPIL ____ NAME OF SCHOOL ____
ADDRESS ____ ADDRESS ____
CITY ____ CITY ____
GRADE ____ SEX ____ DATE OF BIRTH ____ DISTRICT-ATTENDANCE ____
PARENTS/GUARDIAN ____ DISTRICT-RESIDENCE ____

CAUSE OF BLINDNESS OR VISUAL IMPAIRMENT

A. Etiology of ocular condition primarily responsible for vision impairment. (e.g., specific disease, poisoning, injury, heredity or other prenatal influence.)

O.D. ____

O.S. ____

B. VISUAL ACUITY

	DISTANT VISION			NEAR VISION		
	Without correction	With best correction	With low vision aid	Without correction	With best correction	With low vision aid
O.D.						
O.S.						
O.U.						

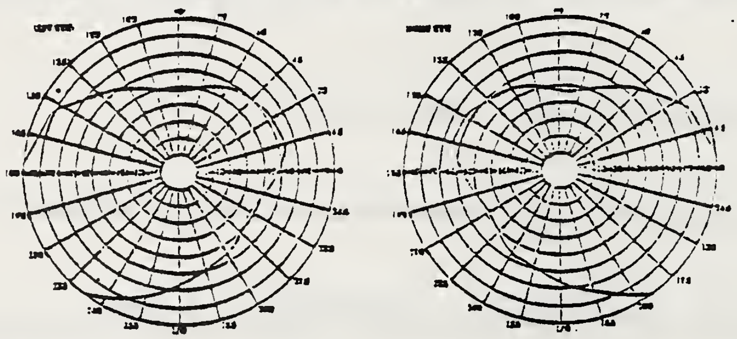
C. If glasses are to be worn, were safety lenses prescribed in: Plastic ____ Tempered glass ____

D. Is there impaired color perception? ____ If so, for what colors? ____

E. FIELD OF VISION: Is there a limitation? ____ If so, record results on chart below.

What is the widest diameter (in degrees) of remaining visual field? O.D. ____ O.S. ____

Type of test used ____ Illumination in ft. candles ____



PROGNOSIS AND RECOMMENDATIONS

A. Is impairment considered: Stable ____ Deteriorating ____ Able to improve ____ Uncertain ____

B. Glasses: Not needed ____ To be worn constantly ____ Close work only ____ Other ____

C. If low vision aid is prescribed, specify type and recommendations for use: ____

D. Lighting requirements: Average ____ High intensity ____ Low intensity ____

E. Use of eyes: Unlimited ____ Restricted, as follows: ____

F. Physical activity: Unrestricted ____ Restricted, as follows: ____

G. When is reexamination recommended? ____

Date of examination: ____

Signature of examiner ____

CENTER FOR THE PARTIALLY SIGHTED
Santa Monica Hospital Medical Center
1225 Fifteenth Street
Santa Monica, CA 90404

C6. Eccentric Viewing Training

EXERCISE 1

READ EVERY WORD SEPARATELY FROM TOP TO BOTTOM. WHEN THE WORD IS SO LONG THAT YOU NEED TWO FIXATIONS TO TAKE IT IN, MAKE A CIRCLE AROUND THE FIGURE WHICH SHOWS HOW LONG THE WORD IS. AFTER AWHILE, YOU WILL GO BACK TO THIS EXERCISE TO CHECK IF YOUR FIELD OF FIXATION HAS INCREASED. SO SAVE THIS TEST.

A	1	DETERMINED	10
TO	2	REFRIGERATE	11
CAN	3	EXAMINATIONS	12
THAT	4	ORGANIZATIONS	13
SKATE	5	REHABILATATION	14
CENTER	6	PRETENTIOUSNESS	15
SLIDING	7	MISPRONUNCIATION	16
SCHEDULE	8	ANTIESTABLISHMENT	17
FRACTIONS	9	DISTINGUISHABILITY	18

Exercise 1

Read every word separately from top to bottom. When the word is so long that you need two fixations to take it in, make a circle around the figure which shows how long the word is. After awhile, you will go back to this exercise to check if your field of fixation has increased. So save this exercise. It is only necessary to circle the figure the first time it takes you two fixations. It is also a good idea to circle the figure the first time it takes three fixations, four fixations, etc.

a	1	determined	10
to	2	refrigerate	11
can	3	examinations	12
that	4	organizations	13
skate	5	rehabilatation	14
center	6	pretentiousness	15
sliding	7	mispronunciation	16
schedule	8	antiestablishment	17
fractions	9	distinguishability	18

Proceed in the same way with the following phrases

to a
be me
he can
two pens
laid down
shall read
would smile
tell stories
crave berries
bring umbrella
how he can smile
that is the fee now
a charge will follow
you can use the rooms
do it once more my friend
she is the one
this will be easy for you
it will start out to be hard
take your time and learn to do

Exercise 2

This evercise will help you find your best angle of fixation so that you can read words/text as plainly and clearly as possible. Most of you should know your angle now so this exercise just gives you more practice using it.

Look at each word. When can you see it most plainly? When you look at the lines above or below it? Or to the right or left of it? Or a combination such as upper left?

an

that

shafer

vision

Exercise 3 Fixation words with fixation lines

Read words left to right. Try to use your angle of fixation and not look directly at the word.

the	our	for
aid	are	use
fee	its	low
all	has	not
and	pay	via
that	some	this
will	free	take
able	note	even
their	start	scale
adopt	apply	other
which	being	cover
center	visual	design
family	source	grants
donate	strong	beyond
obtain	chapel	person
current	patient	sight
found	longer	writes
almost	things	quickly
legally	several	subject
matter	without	distant
discover	crossed	shock
gradual	focus	single
because	looking	attach
human	handsome	period

Paracentral Fixations

From Hailstones and Halibut Bones
by Mary O'Neill

Like acrobats on a
high trapeze, the colors
pose and bend their knees
twist and turn and leap and
blend into shapes and feelings
without end. . .

What is purple? Time is
purple just before night when
most people turn on the light---
but if you don't it's a
beautiful sight. Asters are
purple, there's purple ink.
Purple's more popular than you
think . . . It's sort of great grand-
mother to pink. There are purple
shadows and purple veils, some
ladies purple their
fingernails. There's purple jam
and purple jell and a purple
bruise next day will tell
where you landed when you fell.
The purple feeling is rather
put-out, the purple look is a
definite pout. But the purple
sound is the loveliest thing it's a violet opening in the Spring

What is Gold?

Gold is a metal. Gold is a ring. Gold is a very beautiful thing. Gold is the sunshine, light and thin, warm as a muffin on your skin. Gold is the moon, gold are the stars; jupiter, venus, saturn, and mars; gold is the color of clover honey. Gold is a certain kind of money. Gold is alive in a flickering fish that lives its life in a crystal dish. Gold is the answer to many a wish. Gold is feeling like a king, it's like having the most of everything. Long time ago I was told yellow's mother's name is gold. . .

What is Black?

Black is the night when there isn't a star and you can't tell by looking where you are. Black is a pail of paving tar. Black is jet and things you'd like to forget. Black is a smokestack, black is a cat, a leopard, a raven, a high silk hat. The sound of black is "Boom! boom! boom!" echoing in an empty room. Black is kind--- it covers up the run-down street, the broken cup. Black is charcoal and patio grill, the soot spots on the window sill. Black is a feeling hard to explain, like suffering but without the pain. Black is licorice and patent leather shoes; black is the print in the news. Black is beauty in its deepest form, the darkest cloud in a thunderstorm. Think of what starlight and lamplight would lack, diamonds and fireflies if they couldn't lean against black. . .

What is Brown?

Brown is the color of a country road, back of a turtle, back of a toad. Brown is cinnamon and morning toast and the good smell of the Sunday roast. Brown is the color of work and the sound of a river, brown is bronze and a bow and a quiver. Brown is the house on the edge of town where wind is tearing the shingles down. Brown is a freckle, brown is a mole, brown is the earth when you dig a hole. Brown is the hair on many a head; brown is chocolate and gingerbread. Brown is a feeling you get inside when wondering makes your mind grow wide. Brown is a leather shoe and a good glove-----brown is as comfortable as love.

What is Blue?

Blue is the color of the sky without a cloud; cool, distant, beautiful and proud. Blue is the quiet sea and the eyes of some people, and many agree as they grow older and older, blue is the scarf Spring wears on her shoulder. Blue is twilight, shadows on snow, blue is feeling way down low. Blue is a heron, a sapphire ring, you can smell blue in many a thing: gentian and larkspur, forget-me-nots, too. And if you listen you can hear blue in wind over water and wherever flax blooms and when evening steps into lonely rooms. Cold is blue: flame shot from a welding torch is, too: hot, wild, screaming, blistering blue--- and on winter mornings the dawns are blue. . .

UNLESS YOU FEEL EXTREMELY CERTAIN ABOUT YOUR ABILITY TO FIXATE, REPEAT THIS EXERCISE A COUPLE OF TIMES. THE MORE YOU PRACTICE NOW THE EASIER IT WILL BE IN THE FUTURE.

A	1
TO	2
CAN	3
THAT	4
SKATE	5
CENTER	6
SLIDING	7
SCHEDULE	8
FRACTIONS	9
DETERMINED	10
REFRIGERATE	11
EXAMINATIONS	12
ORGANIZATIONS	13
REHABILATATION	14

C7. Field Test Forms

AGE ______ DATE ______ (L) (R)

STIMULUS: INTENSITY ______ COLOR ______

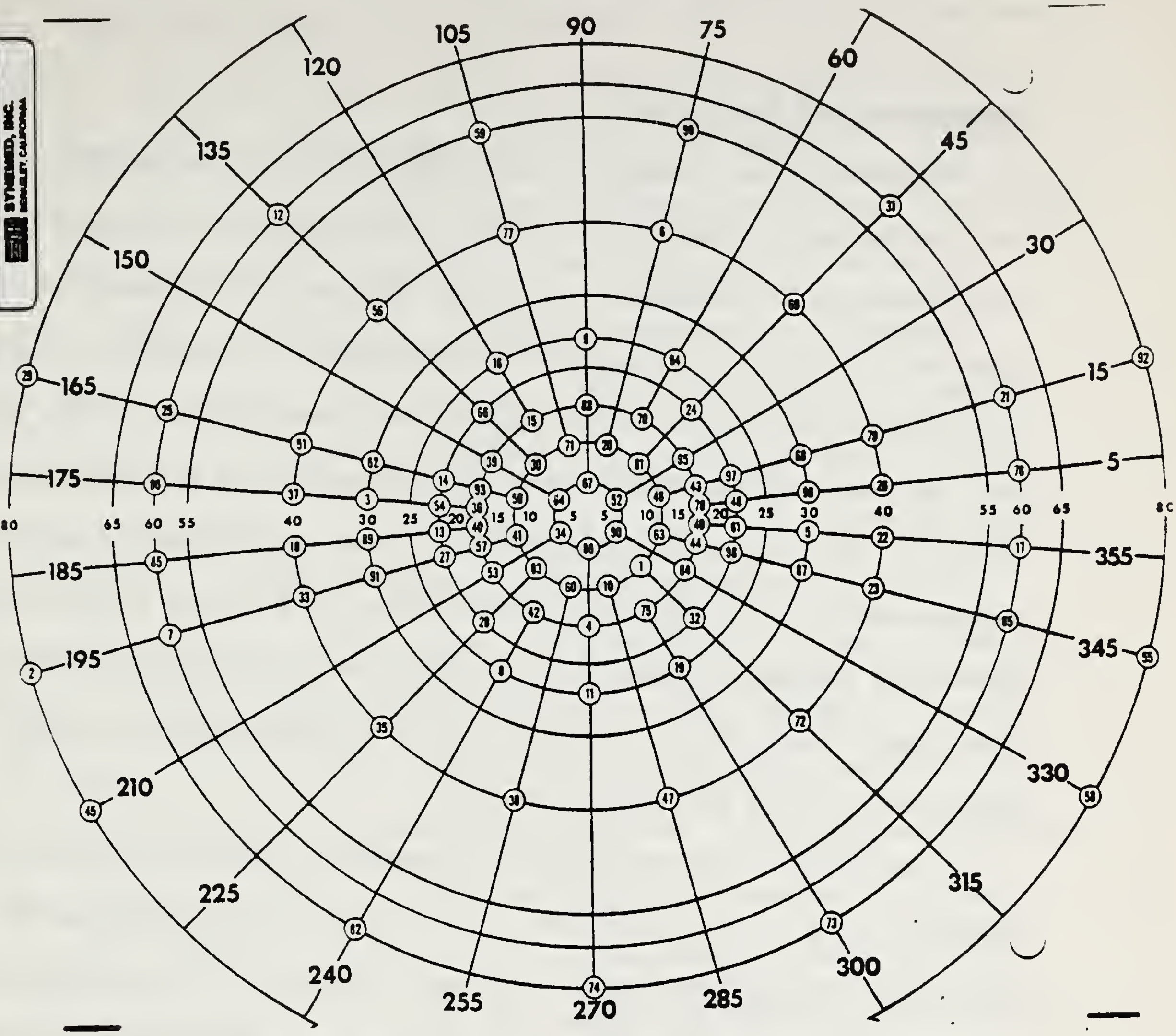
BACKGROUND: INTENSITY ______

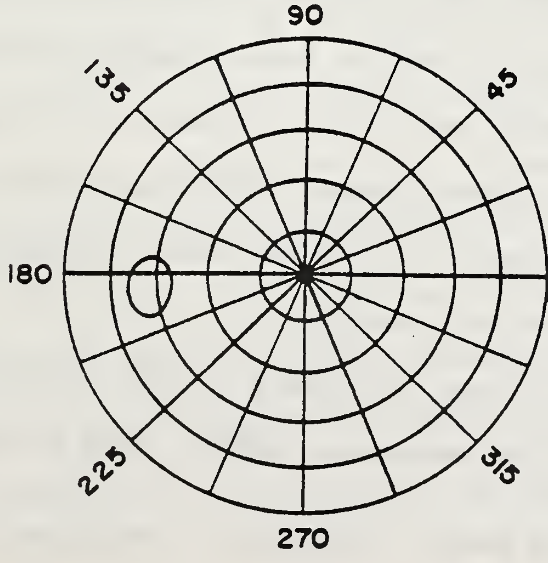
TIMING: DURATION ______ INTERVAL ______

CORRECTION ______

RELIABILITY ______

FIELDMASTER MODEL 101
SYNEMED, INC. BERKELEY, CALIFORNIA





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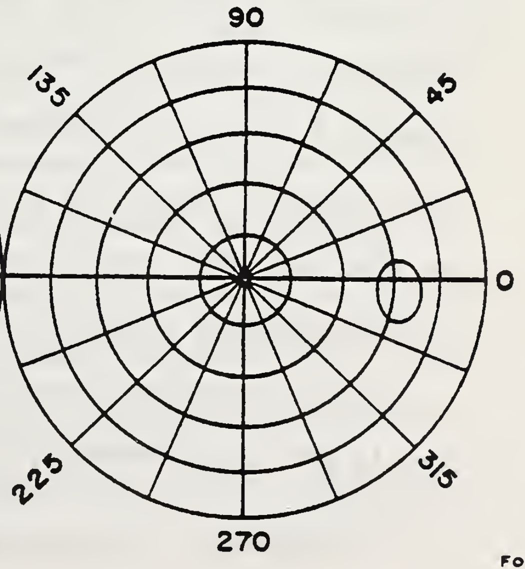

O.D.

NAME ______

DATE ______

REMARKS:

FORM 160

C7.(2) Description of Visual Field Measurement

Measurement and Apparatus

Perimetric measurement of the visual field is carried out at the Center for the Partially Sighted by the use of the Fieldmaster plotter by Synemed. This apparatus is designed to minimize the amount of professional attention required to carry out standardized examination of a patient's visual field. The Fieldmaster consists of an upright hemispherical bowl, chin rest, forehead bar, and head stabilizers to establish either of the patient's eyes at the center of the bowl. The hemisphere is coated with a white, matte finish which is illuminated via a diffused tungsten lamp in a recess at the top. Typical equivalent luminance values for the background lighting are 10 to 35 apostlibs. This range allows effective monitoring of eye movement while still lying within the lowest part of the photopic region.*

A pattern of lighted spots is presented on the inner surface of the hemisphere. Each spot is the end of a fiber optic strand which can be selectively illuminated by the instrument. The spot pattern has been designed to permit controlled exploration matched to the receptor pattern in the human eye. Ninety-nine sample points permit excellent plots of visual field, with the population density of stimuli following the receptor density pattern within the visual field. Equivalent illumination values of the stimulus fiber ends may be varied over a 4000-1 range with a maximum of about 20,000 apostilbs. A light sampler in the light path monitors input to the light crank, feeding the stimulus fibers so that stimulus intensity is kept constant.

A head stabilizing rest allows positioning the subject's head so that either eye is precisely located at the hemisphere center. When so centered, the subject's eye sees directly before it, a symmetrical cross pattern illuminated in a center tube. The eye centering tube also contains a simple telescope which forms an image of the subject's iris on a sensitive photocell. Eye movements are sensed as variation in average image brightness of the iris, and permit the amplifier signal analyzer to detect eye movements away from the center. During automatic testing, the stimulus fibers are sequentially illuminated according to a random sequence. This avoids position anticipation in the subject. When the subject sees both the centering cross and the stimulus light, the response switch is pressed. If the subject's attention is properly centered and therefore cleared by the eye monitoring circuit, pressing of the switch marks the proper location on the test chart and activates the stimulus position change circuitry. A short random portion is added to the time delay of each stimulus to eliminate rhythm effects. The individual eye chart, depicted in the appendix, is automatically marked--or not marked--at each stimulus location.

---

*Fieldmaster Instruction Manual, Synemed Inc., Berkeley, CA 1978.

After positioning the patient so that the eye being examined is properly centered, the proper stimulus intensity must be determined in order to accurately measure the visual field. The standard background illumination in use is 31.5 apostilbs. This level of illumination allows for maximum sensitivity of the eye monitoring apparatus. As a standard, a stimulus intensity of 43 (equivalent to 202 apostilbs) is used, unless the subject fails to respond to this level of illumination. Optical fibers are illuminated at several positions within the field to rule out the possibility of accidentally determining the proper stimulus intensity within a scotoma or visual depression in the patient's field. If the subject does not respond to the standard stimulus level, then the stimulus intensity is gradually increased until the patient does respond. This is the determination of the patient's threshold for stimulus response.

After approaching the initial threshold from both above and below, the range of the threshold is narrowed to within 2-3 stimulus units. The patient's visual field is then plotted at the measured threshold intensity. A table of the conversion of stimulus intensity units to apostilbs is included in the appendix.

A full visual field may be considered from a practical point of view as being made up of two portions: (1) the central field, which is that part of the visual field within the 30° radius of fixation; and (2) the peripheral field, which makes up the remainder of the visual field.*

For purposes of charting, the visual field is divided into four quadrants. A horizontal line passing through fixation divides the field into upper (superior) and lower (inferior) halves, and these in turn are divided into quadrants by a vertical line also passing through fixation. The superior and inferior halves of the visual field are almost equal in size, but the nasal and temporal halves of the field are quite different. The temporal half is considerably larger than the nasal half. The eccentricity of the field is largely caused by the configuration of the orbit and the limitation of the nasal field by the nose and brow. The normal blind spot, where the nerve fibers of the retina join to form the optic nerve, is relatively constant in position and size from patient to patient. It is a vertical oval with sharply defined borders. Its center is located approximately 15.5 degrees temporal to fixation and 1.5 degrees below the horizontal meridian.

Many factors enter into the determination of the visual field in any individual. The visual field will vary to some degree in a single individual depending upon age, the number of times the visual field has been examined previously, the state of the patient's general health and fatigue at the time of the examination, the size of the pupils, the ratio of the background light to stimulus illumination, the ability of the subject to concentrate on the task at hand, and the resulting variation in the speed of response to stimuli within the visual field. Therefore there is really no such construct as a "normal" visual field; but rather, certain variations are permissable which still allow a high degree of accuracy when plotting a visual field.

---

*Harrington, David O., The Visual Fields, C. V. Mosby Co., 1976.

Age depresses the central visual acuity, causing minor depressions in the central visual field which could be interpreted as some indication of pathology. Decrease in the clarity of the media also has a strong effect on the visual field. For example, the presence of a cataract or vitreous opacification acts in the same way as a filter, so that the visual field is being tested under reduced illumination; the measurement of the visual field at threshold intensity should balance out this factor. Minor depressions or scotomas in the visual field may be present in cases of extreme refractive errors. Using corrective lenses during the examination should lessen this effect, but spectacle correction of these refractive errors does have some effect on the size of the field due to the magnification or minification induced by the lenses. The examination is limited by the capacity of the patient to respond to it, and the examiner must be sensitive to not making demands beyond the patient's capabilities.

STIMULUS CONVERSION TABLE

(With a Constant Background and Intensity of 31.5)

Meter Reading	Equivalent Apostilbs
43	202
50	235
86	404
100	470
134	630
150	705
200	940
268	1260
300	1410
350	1645
425	1998
500	2350
750	3525
1000	4700
1250	5875
1500	7050
1700	7990

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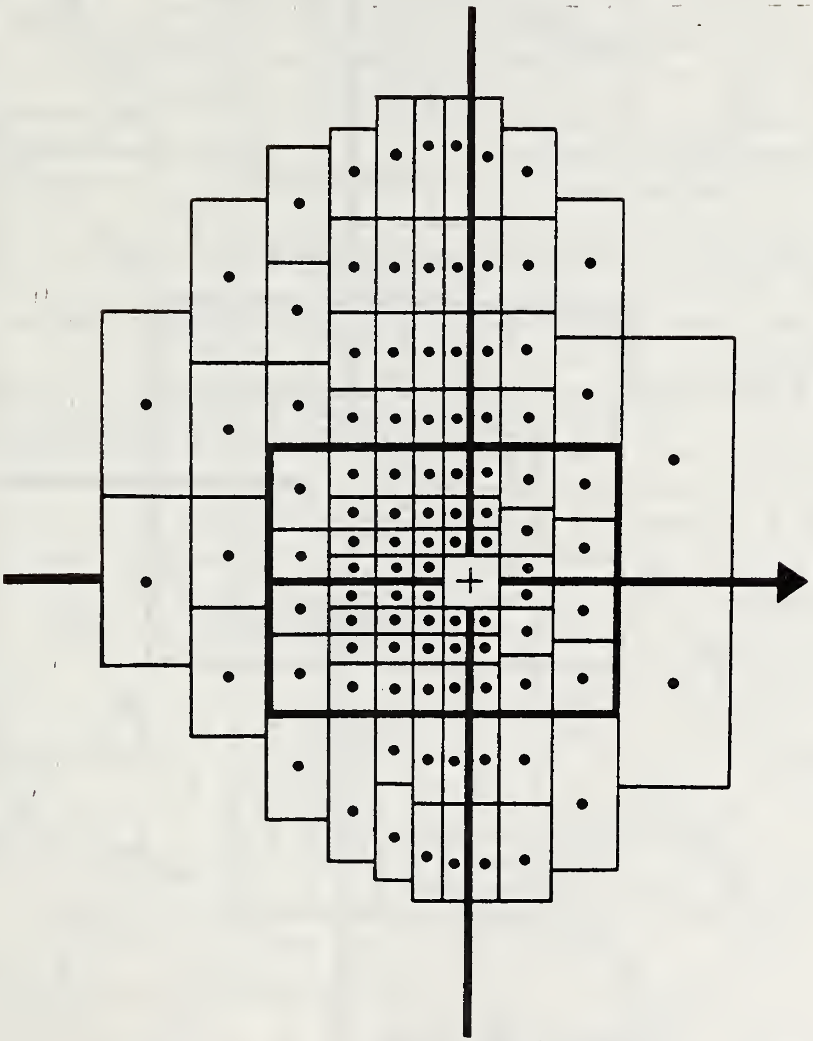
Berkeley, California



NAME

AC DATE Ⓛ Ⓡ

STIMULUS: INTENSITY COLOR

BACKGROUND: INTENSITY

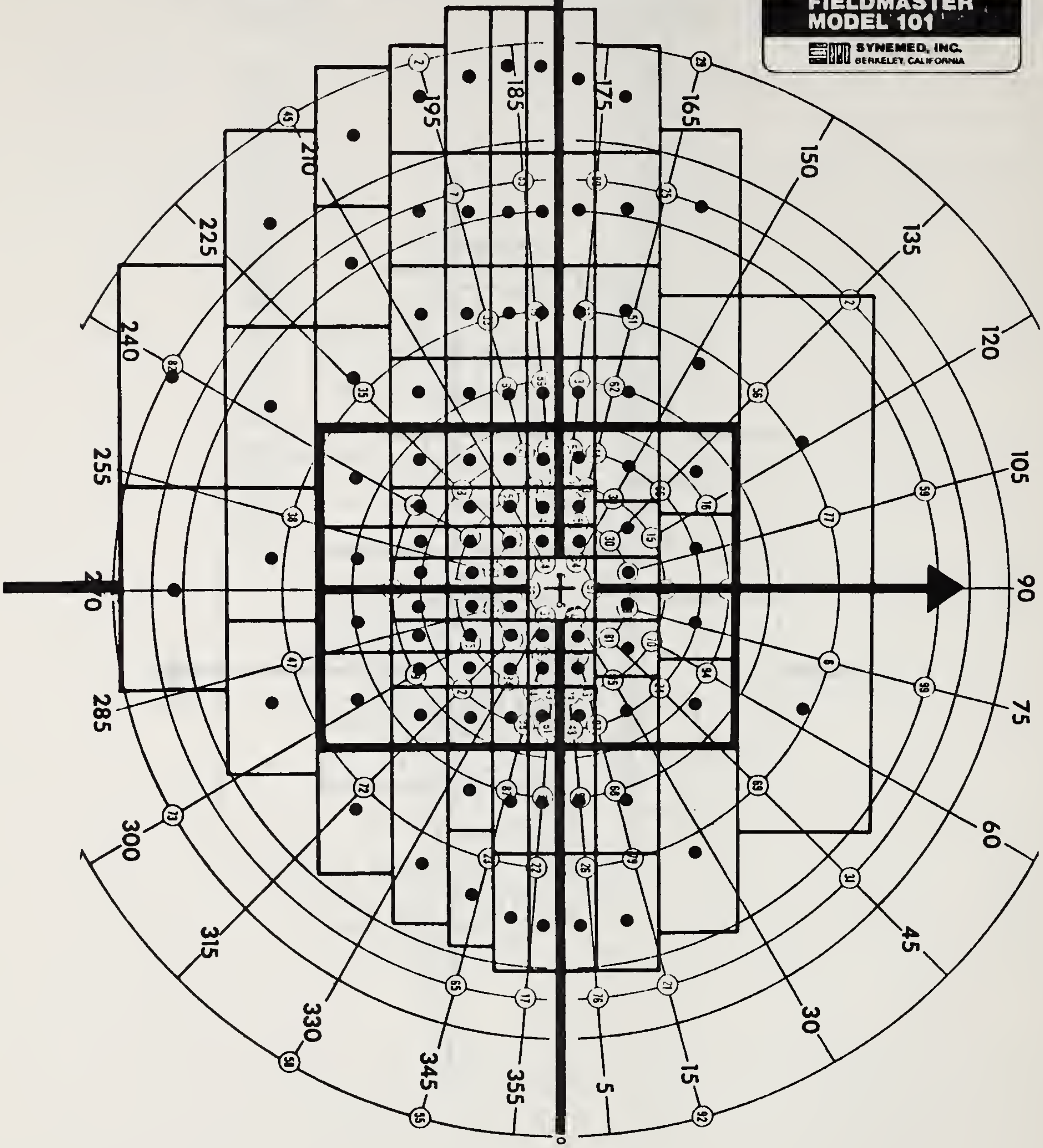
TIMING: DURATION INTERVAL

CORRECTION

RELIABILITY

FIELDMASTER™ MODEL 101

SYNEMED, INC.
BERKELEY, CALIFORNIA



CCTV EVALUATION

Date____________________

PATIENT'S NAME____________________________________

MAGNIFICATION REQUIRED ____________X (comfortable) SIZE PRINT____________________

BEST DISTANCE V.A. ________________ ADD REQUIRED (if any)____________________

DISTANCE VIEWING CCTV______________

CONTRAST H_____ M_____ L_____ ROOM ILLUMINATION H_____ M_____ L_____

POLARITY: WHITE ON BLACK______ BLACK ON WHITE______

READING RATE ________________WPM (1M Sloan)

RESULTS: FAVORABLE________ POOR________ LENGTH OF TRAINING SESSION________

COMMENTS:____

____

____

APOLLO ☐ VISUALTEK ☐ BROCHURES ☐

CCTV EVALUATION

Date____________________

PATIENT'S NAME____________________________________

MAGNIFICATION REQUIRED ____________X (comfortable) SIZE PRINT ____________________

BEST DISTANCE V.A. ________________ ADD REQUIRED (if any)____________________

DISTANCE VIEWING CCTV______________

CONTRAST H_____ M_____ L_____ ROOM ILLUMINATION H_____ M_____ L_____

POLARITY: WHITE ON BLACK______ BLACK ON WHITE______

READING RATE ________________WPM (1M Sloan)

RESULTS: FAVORABLE________ POOR________ LENGTH OF TRAINING SESSION________

COMMENTS:____

____

____

APOLLO ○ VISUALTEK ○ BROCHURES ○

Name...Age.............Date..............................File No......................

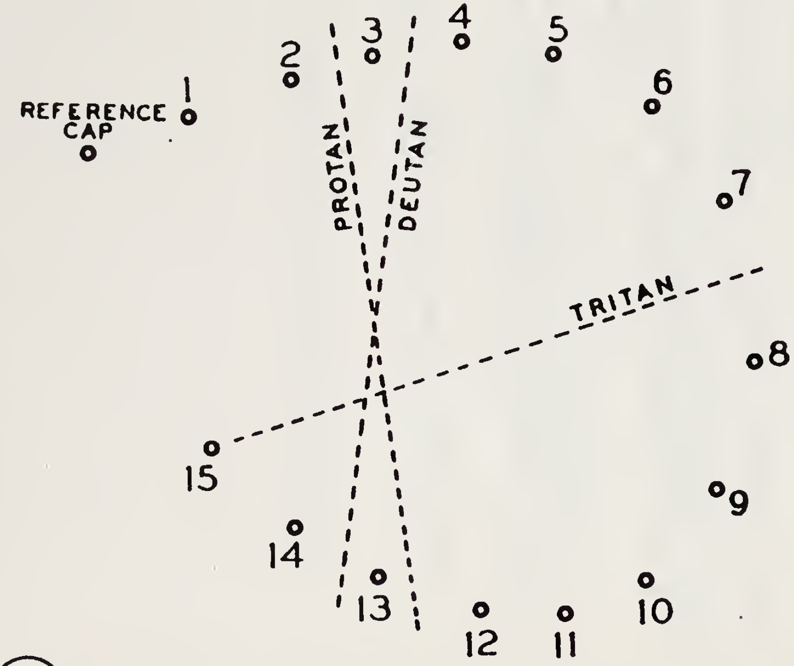
Department CENTER FOR THE PARTIALLY SIGHTED ....Tester..

DICHOTOMOUS ANALYSIS

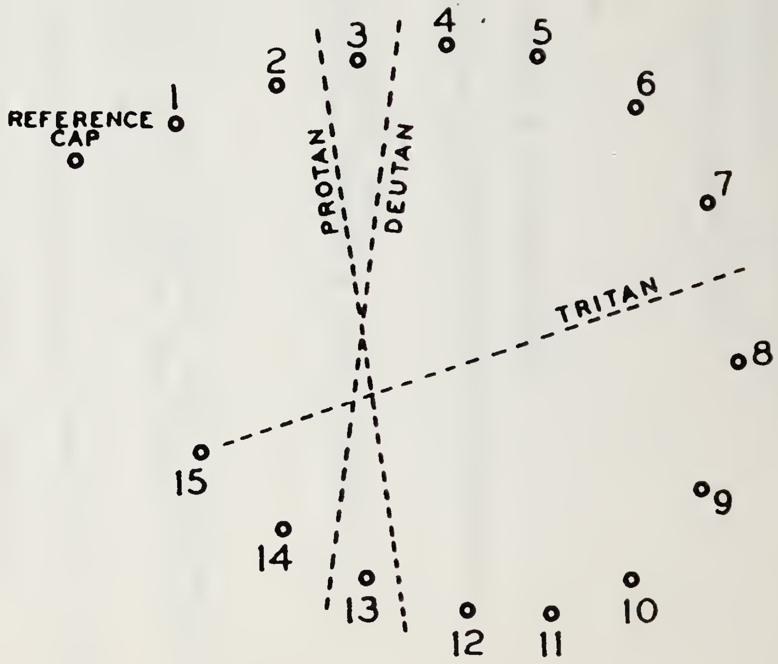
Type	Axis of Confusion		
PROTAN	(RED-bluegreen)	☐	PASS ☐
DEUTAN	(GREEN-redpurple)	☐	
TRITAN	(VIOLET-greenishyellow)	☐	FAIL ☐

Test Subject's Order	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Retest Subject's Order	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

TEST



RETEST



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The Psychological Corporation, New York, N. Y. 10017

70-207S

D1. Consideration for Referral

A BRIEF OUTLINE OF CONSIDERATIONS FOR DETERMINATION OF POSSIBLE ORIENTATION & MOBILITY SERVICES

I. The following are recommended for O & M evaluation:

  A. Those who voice specific fears or problems with (independent) travel such as:

    1. Locating drop-offs: curbs, stairs, etc.
    2. Movement indoors: disorientation, bumping into things, etc.
    3. Locating places outdoors
      a) Stores
      b) Buses/bus stops
      c) House/apt
    4. Crossing streets, particularly busy traffic light intersections.
    5. Generally unwilling or unable to go places they used to or would like to because of limited vision.

  B. Those with very restricted fields, particularly lower field loss.

  C. Those receiving aids needed primarily for travel: monocular, field enhancer, etc.

II. The following would not be recommended:

  A. Those severely infirm: balance problems, severe arthritis, etc.

  B. Those with problems only indoors such as in the kitchen, doing things for themselves: this type of person can better use a counselor-teacher through rehab.

  C. Those in public schools under age 18 unless specifically requested: these should have O & M available in their school district.

  D. Those who live far away since I travel to their home area.

Attached is an evaluation guide which will give more detailed info if you wish it.

FUNCTIONAL VISION EVALUATION GUIDE

- I. Indoors - Lighting usually consistent day or night
  - A. Evaluee stationary
    - 1. General room observation
      - a. Furniture
      - b. Windows
      - c. Doorways
      - d. People
      - e. Items on the wall
      - f. Shape/demensions of the room
      - g. Spatial relationships
      - h. Depth of gross objects
      - i. Color
      - j. Contrasts
    - 2. Specific room observation
      - a. Where and how is vision perceived
        - 1) right, left, both eyes
        - 2) stable/fluctuating
        - 3) central
        - 4) peripheral
        - 5) random "holes"
        - 6) blurred/fuzzy
        - 7) dim/cloudy
        - 8) specific quadrants
      - b. What is preferred lighting
        - 1) behind/above/in front
        - 2) bright/dim
        - 3) are sunglasses useful
      - c. How is lighting perceived
        - 1) Lamps: dim glow/pinpoint/source of light to room/area
        - 2) Overhead lighting: Is or is not a source of illumination adequate/inadequate
      - d. Contrasts
        - 1) Objects: details/shapes only
          - a) dark on light
          - b) light on dark
          - c) light on light
          - d) dark on dark
        - 2) Floor/wall line
        - 3) Doors: openned/closed/ajar

- d. People
- e. Sidewalk/grass/street
- f. Spatial relationships
- g. Depth of objects
- h. Varying distances of perception
- 2. Specific outdoor observations
  - a. What is preferred outdoor lighting
    - 1) behind/above/in front
    - 2) sunny/clear
    - 3) overcast/grey (soft/dim)
    - 4) hazy/bright/glare
    - 5) are sunglasses useful
  - b. Contrasts
    - 1) objects: details/shapes only
      - a) sidewalk/grass
      - b) concrete/asphalt
      - c) crosswalk lines
      - d) shadow/sunlight
      - e) signs: traffic/street
        - i. shape
        - ii. color
        - iii. readable
      - f) traffic lights: near side/far side
        - i. individually
        - ii. color
    - 2) objects in motion
      - a) people
      - b) vehicles - distances perceived important
        - i. cars/trucks/vans/buses
      - c) items being handed to evaluee
      - d) dog/cat/skateboard
- B. Evaluee in motion
  - 1. Maintains position on sidewalk
    - a. residential
    - b. business
  - 2. Perceives elevation changes
    - a. curbs
    - b. stairs

III. Night: outdoors

Basically same observations as daytime.
Separate into differing areas of illumination: residential (minimal lighting), business (medium to bright lighting), etc.

** Important point of concern

Rapid changes in illumination occur often and can be very significant with respect to adaptability of the evaluee's vision:

1. Does vision adapt or not?
2. If vision does adapt, how rapidly?
3. What types of illumination changes have what types of effects?
4. Do sunglasses or visor help?

Possible changes in illumination: indoor to outdoor, outdoor to indoor, sun to shade, bright glaring surface to dim, softer lighted surface, etc.

NOTES:

TRAVEL SUGGESTIONS FOR THE PARTIALLY SIGHTED

If you are experiencing difficulties traveling safely and independently, the following hints may be of use to you. If these remarks are insufficient for your needs or if you continue to feel unsafe, the services of an orientation and mobility specialist may be needed. These services are available here at the Center for the Partially Sighted and also through a variety of other sources.

1. If you have difficulty locating or seeing traffic signals watch instead the flow of parallel traffic (on the street you are walking next to). As it surges forward, that is the start of the green light. Be careful of traffic turning right. Also, do not be mislead by buses which pull out after stopping for passengers not necessarily for a light.

2. Avoid crossing at crosswalks where there is no traffic control. It is far safer to walk the extra distance to a traffic light or stop sign.

3. If you have trouble identifying buses, try asking the following type of question: "Does this bus go to 16th & Wilshire?".

This avoids confusion about why you didn't "see" the bus number.

4. Take special note of colors and contrasts to help you. Sidewalks appear light against the green grass. Often an approaching stree will be darker than the sidewalk because it is asphalt (blacktop). Curbs are often seen as dark lines due to shadows or they may be painted red near the corners. If you are in a position to do so, mark steps or areas of danger in contrasting colors to help you identify them.

5. For some people it is helpful to alternate between looking ahead in the distance for important clues or possible dangers and looking immediately ahead to maintain position and deal with clues or dangers previously spotted.

6. When trying to locate objects at some distance try using a logical scanning pattern or technique. For instance, locate lines or objects nearby that lead visually to the object you are seeking. For example, when looking for a traffic signal try following the crosswalk lines to the opposite curb; then follow the curb back and forth seeking poles up on the walk or parkway. Follow these poles upwards to see which one has

the light.

7. If you are using a white cane to identify yourself as a visually impaired person, carry it diagonally across your body for best protection and visability. Keep the tip low and never point or wave the cane where it can be a danger to others.

8. If at times you feel more comfortable being guided by someone, hold their arm just above the elbow so you are a step behind and to the side. This is known as the sighted guide technique and we would be very happy to demonstrate it in greater detail.

E. Psychological Screening Form

I. Assessment of Depression

A. Check as many as apply

_____ (1) Appetite or weight change

_____ (2) Sleep difficulty or sleeping too much

_____ (3) Loss of energy, fatigability, or tiredness

_____ (4) Psychomotor agitation or retardation

_____ (5) Loss of interest or pleasure in usual activities

_____ (6) Feelings of self-reproach or excessive or inappropriate guilt

_____ (7) Complaints of slowed thinking, mixed-up thoughts

* _____ (8) Recurrent thoughts of death or suicide

_____ (9) Crying

_____ (10) Pessimistic attitude

_____ (11) Brooding about past or current unpleasant events

_____ (12) Preoccupation with feeling of inadequacy

* B. Suicidal ideation/attempts ____No _____Yes

Describe:

C. Onset and duration of current episode of depression:

D. Previous episodes and treatment:

II. Attitudes toward loss of vision (acceptance, anger, hopelessness, self-pity, etc.; Was loss gradual/sudden, expected/unexpected?):

III. Assessment of behavior and motivation to use visual aids (useless to try, too much work, wants a miracle, etc.):

IV. Attitudes toward aid training (if applicable):

V. Pleasant or potentially pleasant activities:

VI. Family and social support network (family in area, people to talk to about vision problem, companion for social/recreational activities):

VII. Other stresses or losses (death in family, serious medical problems, loss of job/income, etc.):

Conclusions and recommendation:

PEAC TELEPHONE PROTOCOL

Hello is this __________? My name is __________ and I'm calling from the Center for the Partially Sighted. Do you remember the Center? Do you remember that when you first came to the Center you were told about a follow-up home visit? Well, the reason I'm calling is because it has been six months since your first visit to the Center, and it is time to schedule your home visit. The first thing I'll do is ask you some questions for our research project and then I just want to check on how you're getting along and if you need any further services. The appointment usually takes from 1-2 hours.

If refused: It would be so helpful if you would let me come to visit you because you are allowing us to collect follow-up information on each of our patients so that we can better provide services to people like yourself. I am also available to answer any questions you might have or help with any problems you may be experiencing.

If refused again: Thank you for your time and call us if you need any further assistance.

F2. PEAC Visit Protocol

Hi, I'm ______________________ from the Center for the Partially Sighted.
(If necessary: I'm here for our 2:00 pm appointment)

(Presumably, the patient has invited you in and you both are seated somewhere in the house.)

As I mentioned to you the other day on the phone, it has been 6 months since your low vision examination and we would like to know how you're getting along...
(Pause for response.)
(Time here for some social, put-the-person-at-ease chit-chat.)
(If the patient starts to talk about the aids and/or appears to be getting way off the track:)

Before we get into that, let me tell you what we will be doing today. I am particularly interested in how you're getting along with ______________(list)
(The list will be precisely those items mentioned in the phone contact when the appointment was made.)

I want to see how you ordinarily do these activities. We'll start (mention in-the-house tasks), then we'll proceed outside and I'll ask you to do (mention out-of-doors tasks).

Do you have any questions?
Let's begin....

Follow-up

CARD 09

PEACER ________________	ID# ☐☐☐☐☐	1-5/
Patient Name ________________	DATE ☐☐ ☐☐ ☐☐ MO. DAY YR.	6-11/
Address ________________	MILEAGE (One way) ☐☐☐	12-14/
Phone ________________		
Other Contacts ________________	TRAVEL TIME ____, ____ ☐☐☐ HRS. MIN.	15-17/

____

DIRECTIONS:

Etiology/Pathology: AGE ______ Date of Birth ____________ Date of LVE ____________

Patient-Specific Concerns:

CARD 09

1 = CPS LVA
2 = OTHER LVA
3 = NO LVA USED

1 = Easily
2 = With difficulty
3 = Didn't do

CODES:
1 = OK
2 = Needs work
3 = Not applicable

			Did Task	Used LVA	Eye	Distance	Illumination	Location of light source	Held correctly/ posture	LVA' adjustment		
											CARD 09	
1.	LVA:	☐ ☐ ☐ ☐ ☐									18-22/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	23-34/	
2.	LVA:	☐ ☐ ☐ ☐ ☐									35-39/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	40-51/	
3.	LVA:	☐ ☐ ☐ ☐ ☐									52-56/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	57-68/	
											CARD 09	79-80/
											CARD 10	1-5/ID
4.	LVA:	☐ ☐ ☐ ☐ ☐									6-10/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	11-22/	
5.	LVA:	☐ ☐ ☐ ☐ ☐									23-27/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	28-39/	
6.	LVA:	☐ ☐ ☐ ☐ ☐									40-44/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	45-56/	
7.	LVA:	☐ ☐ ☐ ☐ ☐									57-61/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	62-73/	
											CARD 10	79-80/
											CARD 11	1-5/II
8.	LVA:	☐ ☐ ☐ ☐ ☐									6-10/	
	TASK:	☒ ☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	☐	☐	11-22/	

CARD 09,10,11

F3.(3)

CARD 11

	FREQUENCY 1 = more than once daily 2 = daily 3 = every other day 4 = weekly 5 = more than once weekly	DURATION 1 = 15 min. or less 2 = 16 - 30 min. 3 = 31 - 60 min. 4 = > 1 - 2 hrs. 5 = > 2 - 5 hrs. 6 = > 5 hrs.	
RE.LVA 1			23-24/
LVA 2			25-26/
LVA 3			27-28/
LVA 4			29-30/
LVA 5			31-32/
LVA 6			33-34/
LVA 7			35-36/
LVA 8			37-38/

OPEN END:

i) For any LVA used (including non-CPS aid) ask for patient-specific problems

ii) For each CPS prescribed LVA not used ask why not!

LVA 1		LVA 2		LVA 3		LVA 4		LVA 5		LVA 6		LVA 7		LVA 8		
																39-54/

CARD 11

CARD 11

OBSERVATIONS:

	Cooperative		Neutral		Uncooperative	
Attitudes of significant others present	1	2	3	4	5	55/
Attitude of patient toward PEAC-visit:	1	2	3	4	5	56/

Patient's Environment:

Home = 1, Work = 2, School = 3, Other = 4 ☐ 57/

SPECIFY

stairs	lighting	organization	wood doors	glass/screen doors	movable obstacles	
☐	☐	☐	☐	☐	☐	58-63/

CODES: 1 = Generally OK
2 = Needs work
3 = N/A

RECOMMENDATIONS: Code 1 = Recommend further CPS contact
2 = No further contact recommended

LOW VISION REEVALUATION	☐	64/
LOW VISION AIDS REASSESSMENT	☐	65/
LOW VISION AIDS RETRAINING	☐	66/
INDIVIDUAL COUNSELING	☐	67/
FAMILY COUNSELING	☐	68/
PATIENT GROUP	☐	69/
WORKING AGE GROUP	☐	70/
O & M TRAINING	☐	71/
ENVIRONMENTAL MODIFICATIONS	☐	72/
BEHAVIORAL MODIFICATIONS	☐	73/
COMMUNITY REFERRAL	☐	74/

WHERE FURTHER CPS CONTACT IS RECOMMENDED
(CODE 1) Specify on reverse side.

CARD 11 79-80/

PHONE LOG

Name of Patient ____________________

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

Date ________ Initials ________

Comments: ____________________

____

FOLLOW-UP REFERRAL FORM

To:

PEACer:

(1) Patient Name: Age:

Adress:

Phone:

(2) Visual History

Date of last appt.:

Date of PEAC:

(3) Resource Requested:

(4) Reason for Referral:

G1. Psychosocial Measures

These psychosocial measures are exactly the same forms found in Appendixes B2.(7 & 8) and B3.(4,5,6,).

CARD 13

PATIENT SATISFACTION

POST TEST

No person or organization is perfect. We all have problems and we at the Center would like to learn more about where you think we could make improvements. Thinking back about the services you received at the Center, what were some of the problems you had? (Pause for open-ended response)

____

____

____

I am now going to read some statements about the visual care you received at the Center. For each statement I would like to know if you strongly agree, agree, are not sure, disagree, or strongly disagree with each statement.

	STRONGLY AGREE	AGREE	NOT SURE	DISAGREE	STRONGLY DISAGREE	
1. I'm very satisfied with the visual care I received at the center.	1	2	3	4	5	*42/*
2. Parking was a problem.	1	2	3	4	5	*43/*
3. Most people with vision related problems are helped a great deal when they come to the Center.	1	2	3	4	5	*44/*
4. With respect to the Center's research program, I did not understand the need for the intake procedures and interviews.	1	2	3	4	5	*45/*
5. The service providers weren't as thorough as they should have been.	1	2	3	4	5	*46/*
6. If I had a question about my vision I could ask for help without any problem.	1	2	3	4	5	*47/*
7. The doctor did his/her best to keep me from worrying.	1	2	3	4	5	*48/*
8. The intake process (interviews, etc.) was boring.	1	2	3	4	5	*49/*
9. The doctor was very careful to check everything when examining my vision.	1	2	3	4	5	*50/*
10. The personnel at the Center treated the patients with respect.	1	2	3	4	5	*51/*

CARD 13

CARD 13

		STRONGLY AGREE	AGREE	NOT SURE	DISAGREE	STRONGLY DISAGREE	
11.	It was hard to get an appointment at the Center right away.	1	2	3	4	5	*52/*
12.	Doctors at the Center can almost always help a person see better.	1	2	3	4	5	*53/*
13.	Medical insurance coverage should pay for more expenses than it does.	1	2	3	4	5	*54/*
14.	It takes me a long time to get to the Center.	1	2	3	4	5	*55/*
15.	The intake process took too long.	1	2	3	4	5	*56/*
16.	Doctors at the Center are able to relieve or cure most vision related problems that people have.	1	2	3	4	5	*57/*
17.	Sometimes the doctor made the patients feel foolish.	1	2	3	4	5	*58/*
18.	Some of the interview questions were inappropriate or were too intrusive.	1	2	3	4	5	*59/*
19.	The Center avoided unnecessary patient expenses.	1	2	3	4	5	*60/*
20.	The Center is conveniently located.	1	2	3	4	5	*61/*
21.	The Center lacks some things needed to provide complete visual care.	1	2	3	4	5	*62/*
22.	The Doctor at the Center seemed very competent and well-trained.	1	2	3	4	5	*63/*
23.	The office hours at the Center are good for most people.	1	2	3	4	5	*64/*
24.	You could get good visual care at the Center even if you didn't have money with you.	1	2	3	4	5	*65/*
25.	There are things about the visual care I received that could have been better.	1	2	3	4	5	*66/*
26.	People were usually kept waiting a long time at the Center.	1	2	3	4	5	*67/*
27.	The Doctor at the Center seemed to have a genuine interest in the patient as a person.	1	2	3	4	5	*68/*

CARD 13 *79-80/*

H1. Low Vision Evaluation (Protocol)

I. Detailed case history

  A. Patient's visual and visual/environmental adaptation problems

  B. Patient's and family's psychological and sociological problems

  C. Visual rehabilitative goals

    1. Instrumental goals (daily living)

    2. Expressive goals

      (a) avocational, educational, vocational

      (b) recreational

      (c) social

  D. Effects of illumination, filters, and environmental surroundings on vision

  E. Mobility problems

  F. Prior visual aids

  G. Other physical impairments

II. Measurement of patient's visual acuities at both distance and near, with and without current corrective lenses (when applicable)

III. Measurement of patient's color perception, eye dominance, effects of filters and illumination, degree of binocularity, and accommodative amplitude

IV. Keratometric measurements

V. Detailed measurement of the patient's visual fields both peripherally and centrally

  A. Arc perimeter--limits of the peripheral visual field

  B. Tangent screen--integrity of the central visual field

C. Amsler Grid--determination of macular integrity

D. Confrontation visual fields--gross approximation of the limits of the peripheral field

VI. Extra-ocular motility

VII. Pupillary reaction to light and accommodation

VIII. External examination of lids and ocular adnexa

IX. Biomicroscopy (if variations from normal are noted, documentation by photography may be performed)

X. Ophthalmoscopy

A. Direct and/or indirect

B. With or without dilation

C. If variation from normal are present, documentation by photography may be performed

XI. Retinoscopy or other objective measurement of refractive error

A. May include VER on patients who are unable to respond to subjective testing

XII. Manifest and/or cycloplegic distance refraction with or without the use of telescopic lenses

XIII. Measurement of any oculomotor imbalance at distance and compensating ductions

XIV. Testing the effects of various telescopic lenses and other distance vision enhancing devices

XV. Testing the effects of conventional and nonconventional lenses for near visual tasks to include:

A. Telescopic lenses adapted for various distances

B. Testing with microscopic lenses

C. Testing with various types of hand-held and stand magnifying devices

D. Testing the effects of illumination and other nonoptical devices (e.g., Typoscope)

E. Testing the effects of electro-optical devices (e.g., CCTV)

XVI. Measurement of oculomotor imbalance at the required near and intermediate working distance(s)

XVII. Testing with various types of contact lenses either alone or in combination with other visual aids

  A. Measurement of tear breakup time and lacrimal efficiency (e.g., Schirmer Test)

  B. Determination as to expected physiological tolerance of cornea to contact lenses, and ability of patient to handle the lenses

  C. Continued follow-up care to maintain corneal integrity

XVIII. Prescribing of appropriate visual aids

  A. Mobility testing with aids when applicable

  B. Use of aids in patient's own environment (loaner aids)

  C. Consultation with patient's family members, employer, prospective employer, teachers, rehabilitation or mobility counselor, or other concerned parties

  D. Reports when appropriate to above-mentioned parties

  E. Consultation with the Center's staff and referral to other staff modalities when indicated (e.g., psychological services, orientation and mobility training, and community resources)

XIX. Ordering and verification of visual aids prescribed

XX. Dispensing, fitting, and training in the proper use of visual aids

XXI. Reevaluation as to the efficiency of the visual aids prescribed, and any problems encountered

XXII. Periodic reexamination and reevaluation of patient

H2. VISUAL PATHOLOGY CODES

Code	Pathology
0100	Corneal and scleral
0200	Cataract
0210	congenital
0220	senile
0299	other
0300	Uveitis
0400	Choroid and Retinal diseases and disorders - (excluding uveitis, diabetic retinopathy, macular disease, retinitis pigmentosa)
0410	retinal detachment
0500	Primary retinal degenerations (Retinitis pigmentosa)
0600	Diabetic retinopathy
0700	Macular disease
0710	juvenile
0720	senile
0800	Glaucoma
0810	congenital
0899	other
0900	Optic neuropathy
0910	congenital
0999	other
1000	Neurological disease (acquired) (brain tumors; hydrocephalus)
1100	Vascular occlusion
1110	central retinal artery
1120	central retinal vein
1130	stroke (cortical blindness)
1200	Myopia (high)
1300	RLF
1400	Other developmental and congenital disorders; e.g. nystagmus and albinism not including congenital optic atrophy or congenital glaucoma associated with the following
1410	coloboma
1420	microphthalmia
1430	amblyopia
1499	other
1600	Other conditions; e.g., arteriosclerosis, hemorrhages
1700	Unknown

H3. VISUAL AID CODE AND PRICE LIST

01 Conventional Lenses	
Spectacles--Distance	01101
Spectacles--Near	01102
Spectacles--Multifocals	01103
Contacts----Distance	01104
Contacts----Near	01105
Other/Unknown	01199
02 Telescopes	
021 Telescope (Distance)--Monocular; hand held	
Low--less than 4.0X	02101
Moderate--4.0X through 8.0X	02102
High--10X and up	02103
Other/Unknown	02199
022 Telescopes (Distance)--Binocular; hand held	
Low-less than 4.0X	02201
Moderate--4.0X through 8.0X	02202
High--10X and up	02203
Other/Unknown	02299
023 Telescopic Spectacles	
Bioptic:	
1.3X through 3.0X	02301
4.0X	02302
6.0X	02303
Full Diameter:	
1.3X through 3.0X	02304
3.5X through 4.0X	02305
6.0X	02306
Other/Unknown	02399
024 Telemicroscopes (Reading Caps)	
1.3X through 3.5X	02402
4.0X and up	02403
less than 1.3X	02401
Other/Unknown	02499
03 Microscopic Spectacles	
Aolite Aspheric Microscope 2X	03001
" " " 4X	03002
" " " 6X	03003
" " " 8X	03004

03 Microscopic Spectacles (cont.)

Aolite Aspheric Microscope 10X	03005
" " " 12X	03006
" " " >12X	03007
DFV Microscopic 2X	03008
DFV " 4X	03009
DFV " 6X	03010
DFV " 8X	03011
DFV " 10X	03012
AO Half-eye +6.00 W 8 B.I.	03013
AO " +8.00 W 10 B.I.	03014
AO " +10.00 W 12 B.I.	03015
Magna-add clip-on	03016
Other	03099

04 Loupes (head mounted)

Clip-on Loupes	04001
Opticaid flip-down (Edroy)	04002
Opti-Visor #DA7 w/ opti-loupe	04003
Other	04099

05 Magnifier

051 Magnifiers—Hand Held (illuminated and non)

Hand magnifiers ≤6.00D	05101
Hand magnifiers +6.00D < x ≤12.00D	05102
Hand magnifiers >12.00D	05103
Other	05199

052 Magnifiers—Stand (Non-Illuminated)

Non-Illum. stand mags ≤6.00D	05201
" std mags 6.00D<x≤12.00D	05202
" stand mags > 12.00D	05203
Other	05299

053 Magnifiers—Stand (Illuminated)

Illum. stand mags ≤ 6.00D	05301
" " " 6.00D<x≤12.00D	05302
" " " >12.00D	05303
Other	05399

06 Artificial Aperture Contact Lenses

X-Chrome	06001
Keratoconnus Rx	06002
Other	06099

07 Field Expansion Aids

Reverse TS	07001
Hemi Mirrors	07002
Fresnel Prisms	07003
Other	07099

08 Light Control Aids

081 Decreased Illumination

Filters	08101
Sunglasses	08102
Visors	08103
Other	08199

082 Increased Illumination

150 watt tensor lamp	08201
200 watt tensor lamp	08202
400 watt tensor lamp	08203
High-intensity fluorescent lamp	08204
Luxo lamp	08205
Nightscope	08206
Penlight	08207
Other	08299

09 Electro-Optical Aids

CCTV	09001
Other	09099

10 Non-Optical Aids

Typoscope/checkwriting guide	10001
Bookstand	10002
Occluder	10003
Jumbo Cards	10004
Phone Dial	10005
Other	10099

CPS FEES FOR MATERIALS

Monoculars		Svc. Code
1. Mayflower 6-8X	$ 39.00	51001
2. Selsi 2.5X (clip-on)	33.00	51005
3. Walters monoculars:		
a. 6X16	69.00	51010
b. 8X20	69.00	51015
c. 10X30	69.00	51020
d. other		51991
Binoculars		
1. Sportoculars	$ 26.00	51028
2. Binoculars 7X35	70.00	51032
Hand Magnifiers		
1. +6.00D COIL	$ 37.00	51040
2. +8.00D COIL	39.00	51045
3. +12.00D COIL	29.00	51050
4. +20.00D COIL	20.00	51055
5. +3.00 B & L	27.00	51060
6. +4.00 B & L	18.00	51065
7. +5.00 B & L	16.00	51070
8. other		52991
Stand Magnifiers		
1. +12.00D COIL	$ 37.00	51080
2. +20.00D COIL	20.00	51085
3. +28.00D COIL	20.00	51090
4. Monarch Stand Magnifier	100.00	51095
5. +3.00D Gooseneck (round)	33.00	51100
6. +3.00D Gooseneck (square)	33.00	51105

Stand Magnifiers (cont'd.)

		Svc. Code
7. +4.00D Gooseneck	$ 30.00	51110
8. Apex Ezyrede #42	50.00	51115
9. Apex Ezyrede #28	23.00	51120
10. Other		53991

Illuminated Magnifiers

1. Raylite	$ 29.00	51130
2. Optima	31.00	51135
3. Magnalite	6.00	51140
4. 10X Selsi	7.00	51145
5. 5X Flash Magnifier	12.00	51150
6. Flash-o-Lens	25.00	51155
7. Other		54991

Pocket Magnifiers

1. +15.00D (black/2 lenses)	$ 7.50	51160
2. +16.00D (black/3 lenses)	7.50	51165
3. +15.50D (black)	7.50	51170
4. +8.00D (folding with brown case)	7.50	51175
5. +8.50D hand magnifier (orange)	2.00	51180
6. +8.50D white pocket magnifier	3.00	51185
7. Other		55991

Miscellaneous Magnifiers, Loupes, etc.

1. EzyMag	$ 11.00	51190
2. 8X AGFA loupe	6.00	51195
3. 8X & 18X loupe	11.00	51200
4. +3.00D clip-on magnifier	18.00	51205
5. +6.50D clip-on magnifier	23.00	51210
6. +10.00D clip-on magnifier	21.00	51215
7. Magna-adds	8.00	51220
8. 3X clip-on loupe	36.00	51225
9. Vigor loupe	7.00	51230

Miscellaneous Magnifiers (cont'd.)		Svc. Code
10. Optiloupe	$ 4.50	51235
11. Behr loupe	23.00	51240
12. Other		56991

A.O. Prism Half-Eyes

1. +6.00D	$ 58.00	51245
2. +8.00D	58.00	51250
3. +10.00D	58.00	51255

Lamps

1. 400 watt high-intensity	$ 68.00	51260
2. 200 watt high-intensity	35.00	51265
3. 150 watt high-intensity	23.00	51270
4. Panasonic fluorescent lamp	54.00	51275
5. Vitalite Circline	24.00	51280
6. Vitalite tube	12.00	51285

Sunlenses, Filters, Visors

1. NoIR		
a. 101	$ 9.00	51290
b. 102	11.00	51295
c. 107	30.00	51300
d. 108	38.00	51305
e. 201	11.00	51310
f. 202	11.00	51315
2. Grey sun filter	1.00	51320
3. Green sun filter	1.00	51325
4. Yellow sun filter	1.50	51330
5. Sun & safety glasses (grey/green)	3.00	51335
6. Plastic goggles (green/yellow/clear/grey)	3.00	51340
7. Visorette (green/black)	1.00	51345
8. Visor (green/black)	1.00	51350

Reading Stands		Svc. Code
1. Able Table	$ 45.00	51355
2. Desk-top reading stand	40.00	51360
3. Oxford copy holder	30.00	51365
4. Other		57991
Non-Optical Aids		
1. Typoscope	$ 1.00	51375
2. Plastic clip-on occluders	1.00	51380
3. Telephone dial	1.00	51385
4. Lined tablet/notebook paper	2.00	51390
5. Jumbo cards	2.50	51395
6. Lo-Vision cards	4.00	51400
7. Eye patch (flesh or black)	.75	51405
8. Pencils (turquoise/charcoal)	.75	51410
9. Medium or bold Expresso pen	1.00	51415
10. Rembrandt pen	1.00	51420
11. Penlights	3.00	51425
12. Marks writing guide	23.00	51430
13. Black suction occluder	3.00	51435
14. Other		58991
Miscellaneous		59991
1. Eyeglass cases		
a. Pastel	$ 1.50	
b. Hard case	1.50	
2. Heat disinfection unit (soft contact lenses)	40.00	
3. Magnalite batteries	1.50	
4. Bulbs for Optima & Raylite	.75	
5. Tensor bulbs		
6. "C" batteries		

Contact Lenses (Fees for materials/per lens)			Svc. Code
1. Conventional/PMMA			
a. Minus Lenses:	Plano to 10.00D	$15.00	51445
	> 10.00D	20.00	51450
b. Plus Lenses:	Plano to 10.00D	$15.00	51460
	> 10.00D	20.00	51465
2. Hydrophilic (Tresoft) unwarranted:		$30.00	51470

Glass Rx

Prices are for White Lenses Assembled	Corrected Curve Single Vision	RT-22 FT-25	One Piece Ultex or Executive	Kryptok 22
Spheres + or -				
Plano to 2.00	12.00	27.00	28.00	18.00
2.25 to 4.00	13.00	28.00	30.00	20.00
4.25 to 7.00	14.00	30.00	31.00	24.00
7.25 to 12.00	15.00	33.00	N.A.	27.00
Compounds				
Plano to 2.00 SPH				
.12 to 2.00	12.00	29.00	30.00	20.00
2.25 to 4.00	14.00	30.00	31.00	21.00
4.25 to 6.00	16.00	32.00	32.00	23.00
2.25 to 4.00 SPH				
.12 to 2.00	14.00	30.00	31.00	21.00
2.25 to 4.00	15.00	31.00	32.00	23.00
4.25 to 6.00	17.00	33.00	34.00	25.00
4.25 to 7.00 SPH				
.12 to 2.00	15.00	32.00	33.00	23.00
2.25 to 4.00	17.00	33.00	35.00	24.00
4.25 to 6.00	18.00	35.00	36.00	27.00
Trifocals Add		9.00	9.00	

GLASS EXTRAS - Add to base fee

Prescription Extras	Single Vision	Multi Focals
Larger than Standard	4.50	63mm 6.00 71mm 12.00
Heat Treating	4.50	4.50
Slab-off	--	18.00
Flat-top 28 bifocal	--	3.00
Flat-top 35 bifocal	--	4.00
Prism in Distance to 4Δ	3.00	3.00
Prism in Distance 4.25 and above	6.00	6.00
Hi-Lite	7.00	Not Available
Edged for Metal Frames	3.00	3.00
Myodisc	12.00	12.00
Special High Add (>3.00)	--	12.00
Balance Lens	4.00	6.00
Frosted Lens	7.00	7.00
Glass Tints/Coatings	Single Vision	Multi Focals
Absorbtive Tints		
Pink 1 or 2	2.00	3.00
Grey 1-2-3	3.00	4.50
Green 1-2-3	3.00	4.50
Photogrey	6.00	15.00
Photosun	9.00	22.00
Photogrey Extra	9.00	18.00
Therminon	5.00	5.00
Coatings		
Anti-Reflection	7.00	7.00
Pink/Grey/Green	6.00	6.00
Gradient Coating	10.00	10.00
Edge Coating	10.00	10.00

astic Rx

	SV White	Round Bifocal	Flat Top Bifocal 22/25	Round Aspheric Lenticular	Flat Aspheric Lenticular
heres					
or -					
ano to 2.00	11.00	23.00	27.00	N. A.	N. A.
25 to 4.00	17.00	26.00	30.00	N. A.	N. A.
25 to 8.00	18.00	30.00	35.00	68.00	78.00
25 to 12.00	19.00	33.00	38.00	68.00	78.00
. 25 to 16.00	24.00	45.00	50.00	68.00	78.00
mpounds					
to 2.00 Sph					
2 to 2.00	12.00	24.00	29.00	N. A.	N. A.
25 to 4.00	18.00	26.00	30.00	N. A.	N. A.
25 to 4.00 Sph					
2 to 2.00	18.00	27.00	32.00	N. A.	N. A.
25 to 4.00	19.00	30.00	34.00	N. A.	N. A.
25 to 8.00 Sph					
2 to 2.00	20.00	33.00	38.00	+8.00 = 63.00	+8.00 = 72.00
25 to 4.00	21.00	36.00	40.00		
25 to 10.00 Sph					
2 to 2.00	24.00	38.00	41.00	72.00	84.00
25 to 4.00	25.00	39.00	43.00	72.00	84.00
25 to 12.00 Sph					
2 to 2.00	27.00	41.00	44.00	72.00	84.00
25 to 4.00	30.00	44.00	47.00	72.00	84.00
25 to 16.00 Sph					
2 to 2.00	38.00	48.00	53.00	72.00	84.00
25 to 4.00	41.00	51.00	56.00	72.00	84.00

PLASTIC EXTRAS - Add to base fee

Prescription Extras	Single Vision	Multi Focals
Powers Beyond Listed Range:	1.50 per diopter	
Flat-top 28 bifocal	--	3.00
Flat-top 35 bifocal	--	7.50
Executive bifocal	--	20.00
Balance lenses	4.00	6.00
Lenticular	7.00	10.00
Frosted Lens	7.00	--
Black-out Lens	7.00	--
Hyperaspheric (Welch)	63.00	RT 90.00 FT 98.00
Aspheric Lenticular (sphere)	39.00	--
Aspheric Lenticular (Comp.)	44.00	--
Full-field aspheric RT (sphere)	--	74.00
Full-field aspheric RT (Comp.)	--	78.00
Full-field aspheric FT (sphere)	--	88.00
Full-field aspheric FT (Comp.)	--	90.00
Oversize Lenses (73 mm.)	12.00	20.00
Prism up to 3.0Δ	5.00	5.00
Prism 3.25 to 5.0Δ	6.00	6.00
Prism 5.0Δ and above	1.50 per 1.00Δ per lens	
Non-stock bifocal adds (>3.00)	--	13.00
Plastic Tints/Coatings	Single Vision	Multi Focals
Pink Tints	4.00	4.00
Fashion Tints	6.00	6.00
Gradient Tints	10.00	10.00
Diamond Coating	10.00	10.00

SANTA MONICA HOSPITAL MEDICAL CENTER

1225 15th Street

Santa Monica, CA 90404

CENTER FOR THE PARTIALLY SIGHTED

PATIENT SERVICE CODES AND CHARGES

OPTOMETRIC SERVICES	Service Code	Price
Low Vision Evaluation and Training	80002	$ 75.00*
Complete Eye Examination	80003	50.00*
Follow-Up Low Vision Evaluation (after 6 mos.)	80011	30.00
Other:	89991	$

PROFESSIONAL SERVICE CHARGES		
Frame Selection	80016	$ 15.00
Microscopic System	80021	20.00
Telescopic System	80026	40.00
Magnifiers, Loupes, etc.	80031	15.00
Monocular or Binoculars	80036	15.00
Single Vision Rx	80041	15.00
Bifocal Rx	80046	20.00
Other:	87991	$

PSYCHOLOGICAL SERVICES		
Private Therapy (per session)	80056	$ 45.00
Family Therapy (per session)	80066	45.00
Other:	88991	$

*This breakdown is for Medicare/Medi-Cal accounting purposes only. The fee for full low vision evaluation and eye examination remains at $125.00, except in those cases where full low vision services are not warranted.

HOUSEHOLD HINTS

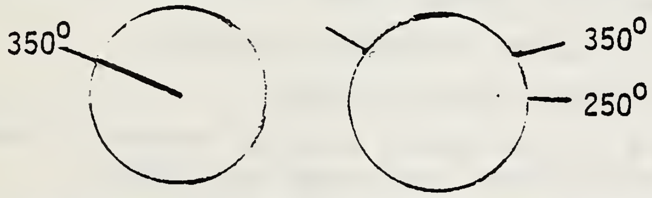
It is very important to use proper lighting (you may need more light or less light based on what you are doing and where you are doing it).

Color contrast will help in many ways--dark object against light background and the other way, light object against dark background.

Keep things orderly.

KITCHEN

- When pouring dark liquids (such as coffee), use a light colored cup.
- Dark liquid -- light cup -- dark background
- Light liquid -- dark cup -- light background
- Water -- dark glass (do not use clear transparent glass)
- Dark cutting board -- light foods
- Light cutting board -- dark foods
- High intensity lamp at the dinner table
- Brightly colored paint or cloth tape on cupboards, drawers, doors, and handles of equipment.
- Stove and oven dials, hooks, exact size measuring spoons and cups can also be marked in this way. Perhaps the oven dial could be marked at the degree most frequently used--or perhaps 2 or 3 marks would be helpful.



- Tape the back burners OFF, to avoid reaching over a forgotten lit front burner.
- Droppers can be used for vanilla, etc.
- Recipe index cards can be color coded: 1 color for meat, another color for vegetables, etc.
- A timer helps.
- Holders for recipes (can also be used for holding music, books, etc.)
- Bottles and groceries can be relabeled in larger print with black ink on matte white paper...or in a similar way.
- Dark dinnerware (such as earthernware plates) -- light plain tablecloth, etc. (Patterned tablecloths can become confusing)
- Keep room doors either completely open or completely closed--not ajar.
- Keep cabinet doors completely closed.

HOUSEHOLD HINTS

MISCELLANEOUS

- Magnifying mirrors help with makeup, shaving, etc.
- A towel on the wall opposite the bathroom mirror hung at an appropriate height can be used as a background for the image of your head in the mirror (light colored towel if you have dark hair--dark colored towel if you have light hair)
- Wood or dull-plastic material for towel racks and bathroom accessories produce less glare than metal or glass.
- Contrasting color behind lampshades (such as a wall hanging) will make unlit lamps easier to identify.
- A wall dimmer light switch would allow the adjustment of room lighting to a level that is compatable with vision and the time of day.
- Tasteful bright color contrasts can aid in locating the thermostat, electrical wall outlets, drawstrings on draperies, etc.
- A thick, black or dark pen, with or without a vacuum base, could be left where it would be most frequently used.
- Alarm clocks should be chosen with color contrast in mind...confusing patterns should be avoided.
- If one must smoke, cigarettes are more visible in dark ashtrays on light surfaces.
- Clothes can be grouped in the closet by which items go with red, which items go with blue, which items go with green, etc.
- Windows and glass doors should be marked to prevent accidents.
- Move slowly into a dark room with arms loosely folded.
- Bright colored paint or adhesive on the leading edge and runner of steps (or at least the first step and last step) aids depth perception.
- Poisons should be visibly and vividly marked and put out of reach of children. (Especially important when the parents are partially sighted)

POSSIBLE HAZARDS

Glass Tables (use round tables when possible)

Extension Cords

Phone Cords

J

COMMUNITY RESOURCE REFERRAL FORM

PATIENT: AGE:

ADDRESS: PHONE:

RESOURCE REQUESTED:

BY CPS STAFF MEMBER:

DATE	AGENCY	ACTIVITY

Codes for referral sources (card 01, Cols. 13-14)

10 = MD, ophthalmologist

20 = OD, optometrist

30 = Senior citizen organization

31 = AAA, Area Agency on Aging

40 = Vocational Rehab - Dept of Rehabilitation

50 = Public schools

60 = Organizations for the visually impaired or other handicapping conditions

70 = Other (unspecified)

71 = Community referral services or social service organizations

72 = CPS outreach & Public Relations

73 = Word of mouth, friend, another patient

CHIEF VISUAL COMPLAINT (card 01, Cols. 37-38)

01 = IN TERMS OF VISUAL SENSATIONS (e.gs. blurring, cloudy, spots, floaters, shadows flashing lights...)

02 = IN TERMS OF A VISUAL CONDITION (e.gs. astigmatism, retinal function, mac. degen.)

03 = IN TERMS OF FEELING STATES ASSOCIATED WITH THE EYES (e.g. eye pain, fatigue, headaches, burning sensation...)

04 = IN TERMS OF A VEAP (e.g. can't or unable to do: read, write--any VEAP except those concerning mobility.)

05 = IN TERMS OF O&M PROBLEMS &/OR VISUAL FIELD DEFECTS (e.g. tunnel vision, no peripheral vision...)

06 = IN TERMS OF PROBLEMS WITH ILLUMINATION (e.g. light/dark adaptation, glare, light sensitivity, night blindness, etc.

10 = MISCELLANEOUS/OTHER

99 = PATIENT ASSERTS NO COMPLAINTS

Codes for Expectation #6 - What is missing most? (card 04, Cols. 54-56)

Eyes/sight/vision....................	100
Reading........	150
Driving..............................	200
Working..............................	250
Mobility.............................	300
Socializing..........................	350
Independence.........................	400
Security.............................	450
Significant others...................	500
Facial expressions of others.........	550
Other................................	900
Nothing..............................	999

Codes for Purpose of Appointments (cards 15-20, as noted on Patient Log)

01 - Intake Interviews
02 - LVE and/or Prescriptions (Fields)
03 - LVA Training, Recheck, Dispensing
04 - O & M
05 - Psych - Individual
06 - Psych - Older Patient Group
07 - Psych - Working Age Patient Group
08 - Psych - Family or Parent Group
09 - Psych Screening

Community Referrals
10 - Transportation
11 - Job (Voc Rehab)
12 - Recreation
13 - School
14 - Housing
15 - Social Services
16 - PEAC
17 - VER

Dismissals

90 - Fully Sighted
91 - Functionally Blind
92 - Partially Sighted but nothing we can do for them
93 - Refused Services - or does not desire services at this time
94 - Completed Services (nothing further planned/patient calls us when nec.)
95 - Deceased
96 - Patient left the area and/or was from out of the area and returned home
97 - Reentry (code used only after 90-96)

L. Spanish Translations

The following Center materials have been translated into Spanish for the benefit of our Spanish-speaking patients:

A. 1. Patient Information Form
   2. Detailed Explanation of Services
   3. Informed Consent form
   8. Telephone Protocol

B. 2. Case History Form, Part I
   3. Case History Form, Part II

I. Household Hints

N. Center Brochure

THE WASHINGTON POST Wednesday, January 16, 1980 / D 5

COPING: Sharpening the Focus on the Partially Sighted

By Carol Krucoff

Samuel Genensky lives "in a world of shape, form and color." Legally blind since birth when a hospital staffer mistakenly put an alkaline solution in his eyes instead of silver nitrate, he has no vision in one eye and partial sight (20/800) in the other.

Yet with few exceptions, the 52-year-old mathematician can do anything a fully-sighted person can. He strides confidently down unfamiliar city streets without the aid of a dog, cane or human. He can read newspapers, write with a pen, watch movies, plays and ballgames.

The key to his seemingly extraordinary abilities is the variety of visual aids he employs. He wears binoculars around his neck to help him read street signs or traffic signals and, with the other end, find objects on the floor.

A pair of telescopic spectacles—which look like a jeweler's glass attached to a pair of glasses—allow him to watch television, and a pair of "monster binoculars" enable him to sit in a theater balcony and watch a ballet. At his home and office, closed circuit television cameras focus on a printed page so he can read the enlarged letters on a screen.

"The vast majority of the legally-blind are not blind," Genensky stresses. "And if most partially-sighted people had the appropriate visual aids they could function in the mainstream of society."

As director of the recently-established Center for the Partially Sighted in California, Genensky is helping hundreds of partially-sighted people do just that. He was in Washington this week to investigate future funding sources for the federally-supported facility which provides examinations, visual-aid prescriptions, mobility training and counseling for the partially-sighted.

"When it comes to services, almost all the emphasis has been on the functionally blind," notes Genensky. "Yet there are 116,000 functionally-blind people in the country and 1.75 million partially sighted."

Society's tendency to classify people as either blind or sighted, Genensky says, "condemns a large number of people to be classified as blind who aren't."

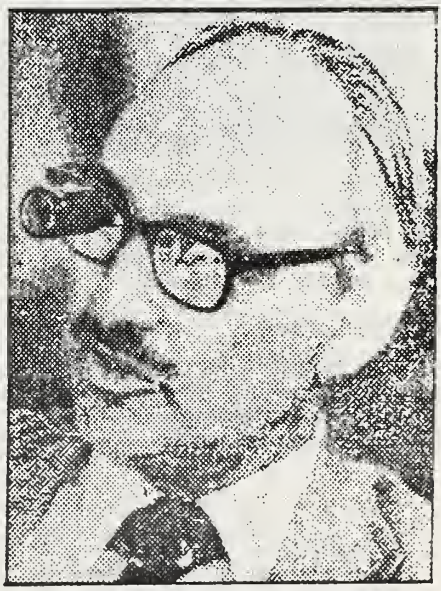
One problem is a confusion in terminology. "*Functionally blind* people can see nothing at all or just light and shadow," he explains. "A person is *legally blind* if vision in the better eye is correctable to no better than 20/200.

"A person is *partially-sighted* if visual acuity in the better eye, even with ordinary corrective lenses, does not exceed 20/70. In general terms, a partially-sighted person is unable to read newspaper column type even with ordinary corrective glasses."

His own experience of being forced to attend a high school for the blind for one year, started his personal crusade to prove that partially-sighted people can use what vision they have to function in the mainstream of society.

He earned a Ph.D. in mathematics "because it was the last thing anyone thought I could do," and started the center "to help others like me learn that they can make it."

For more information, write The Center for the Partially Sighted, Santa Monica Hospital Center, 1250 Sixteenth St., Santa Monica, Calif. 90404.



Dr. Samuel Genensky, by Harry Naltchayan—The Washington Post

M.(2)

United States
of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 96th CONGRESS, SECOND SESSION

Vol. 126 WASHINGTON, TUESDAY, FEBRUARY 19, 1980 *No. 25*

Senate

THE PARTIALLY SIGHTED DO ACHIEVE

● Mr. RANDOLPH. Mr. President, I am always gratified when our news media provides information to the general public about the abilities and accomplishments of handicapped individuals. We all need to be reminded that when opportunities are provided, our Nation's handicapped cannot only function in the mainstream of society but can make valuable contributions.

Such a reminder is contained in a recent article in the Washington Post about Dr. Samuel Genensky, director of the recently established Center for the Partially Sighted in California. Legally blind, Dr. Genensky uses a variety of visual aids to do almost anything a fully-sighted person can do. He has started a personal crusade to help other partially sighted men and women learn that they can make it.

As chairman of the Subcommittee on the Handicapped, I commend this constructive effort. I feel my colleagues will read this article with interest and I ask that it be printed at this point in the RECORD.

The article follows:

[From the Washington Post, Jan. 16, 1980]

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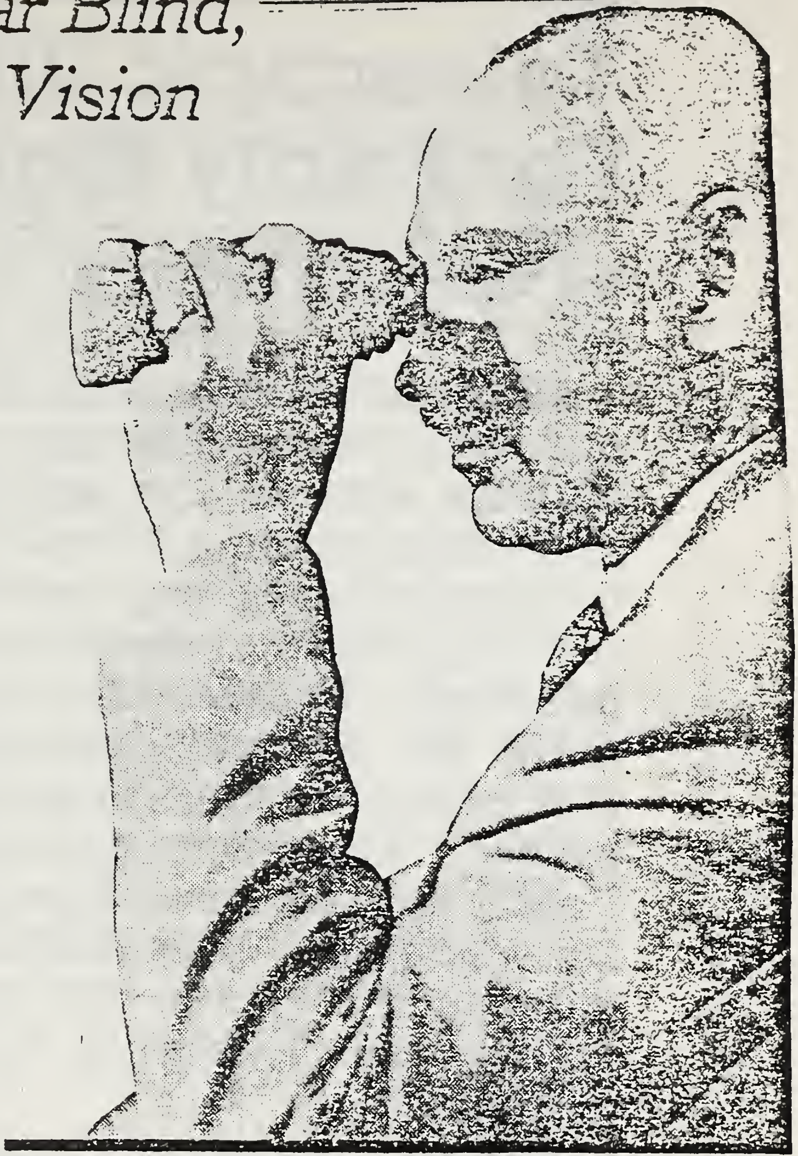
M. (3)

THE NEW YORK TIMES, TUESDAY. APRIL 15, 1980

For the Near Blind, Telescopic Vision

By MICHAEL deCOURCY HINDS



The New York Times/Chester Higgins Jr.

Dr. Samuel Genensky, who aids the partially sighted

He sees nothing with his left eye. and only vague shadows and shapes with his right eye. But that doesn't keep him from crossing Times Square without a cane on his way to see a ballet.

Will power and simple technology — telescopic glasses and other aids — allow Dr. Samuel Genensky to function nearly as well as a fully sighted person. "The only disadvantage is that I can't girl-watch unobtrusively," said Dr. Genensky, a mathematician who founded the Center for the Partially Sighted in California to share his methods.

"Until recently," Dr. Genensky said, "partially sighted persons were treated as though they were totally blind or not treated at all, which was actually the better alternative — then, at least, they wouldn't be discouraged from using what sight they had left." According to him, there are about 2 million partially sighted persons in this country who are neglecting their vision.

At the Center for the Partially Sighted, at the Santa Monica (Calif.) Hospital Medical Center, partially sighted persons are examined by low-vision specialists and given the appropriate visual aids. The devices range from an ordinary set of high-powered binoculars for writing to a camera that can reproduce and greatly enlarge reading materials, or other fine work, on a closed-circuit television set.

Version of Opera Glasses

For city strolling, Dr. Genensky himself uses a pair of glasses that have a small telescope, about three inches long, mounted in front of the left lens. With the telescope, a person with ordinary vision could see a bobby pin a block away, but it allows Dr. Genensky to see the curb and know how the traffic is moving. The glasses are expensive, about $400 to $600, but "they can open the world up for a person who has been terrified of leaving home," he said. His version of opera glasses is a monocular zoom lens about a foot long that allows him to enjoy movies, theater and ballet — pleasures that most partially sighted persons have long given up.

The seemingly obvious solution of using high-powered lenses to improve vision is rarely suggested to partially sighted persons, said Dr. Genensky, who started using binoculars during his sophomore year in high school. After getting his doctorate in mathematics and working at the Rand Corporation as a strategist for the Air Force for a dozen years, he got interested in developing and promoting visual aids. In 1967, he and his colleagues at Rand developed a closed-circuit television system to make reading possible for persons with impaired vision. Now, about 10,000 of the sets, which cost between $1,400 and $2,200, are in use.

But Dr. Genensky, frustrated that the visual aids weren't getting wide distribution, started organizing the country's first center exclusively for partially sighted persons. With over a million dollars in grants from the Rehabilitation Services Administration, the National Institute of Handicapped Research and the Federal Administration on the Aging. Dr. Genensky was able to open the center in late 1976. Since then, the small center has treated over 1,000 patients, and in 70 percent of the cases "we've come up with an optical solution to their problems," he said.

Hope and Dependence

Overcoming visual handicaps, though, is only part of the problem, because partially sighted people have been conditioned to give up hope and become dependent on others, he said. "An instructor at a school for the blind in Boston once asked me, 'Why can't you act like a well-behaved blind child?' I replied, 'Because I'm not blind,'" recalled Dr. Genensky, whose eyes were nearly destroyed at birth by a doctor who mistakenly put an alkaline solution in his eyes instead of the silver nitrate that is used to prevent infection. ("If it had happened now, I would have become a millionaire," he said, "but back in 1927, people accepted malpractice as an act of fate.")

To help patients overcome their earlier conditioning, the center provides extensive mobility training as well as individual, group and family counseling. Friends and parents of the patients are also invited to attend workshops where they find out how to ease the patient's adjustment into the new, often frightening experience of becoming independent. The patient's home and work place are also visited by low-vision experts, who suggest improvements and tailor visual aids to each situation.

Since the center is a pilot project, Dr. Genensky said, a good portion of the staff's time is devoted to evaluating and refining services "so we can help set up similar centers around the country."

New York Times - Large Type Weekly
April 28, 1980

Telescopic Vision For Partly Sighted

By MICHAEL deCOURCY HINDS

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M.(8)

Taking a peek at the needs of partially sighted

Joseph Vining, a student at Madison Elementary School in Santa Monica, is introduced to the monoculer, an aid for students with visual impairments.

Tape covers oven settings.

Counselors make house calls — at home or work

By PAT ALSTON
Evening Outlook Staff Writer

Kings. Queens. Jacks. When you've played cards five hours a day, every day, for years, you get a feeling for the faces almost before you turn them up.

And then, with just a simple twist of the wrist, those faces, those magical combinations of diamonds and hearts, pop into full view — if you can see them.

But if passing years have left you with impaired eyesight, a good hand might not be in the cards for you. Do you have to give up cards?

Not necessarily, says Ann Schulkin, a counselor with the Center for the Partially Sighted at Santa Monica Hospital Medical Center. It's time to bring out the extra-large-print playing cards.

You might say Ann and associate Lise Tong have taken a peek into the frequently overlooked, everyday problems of the partially sighted. They are PEACers (pronounced "peekers") - personal environmental adjustment counselors — who visit patients in their homes, schools or at work to see how effectively they are using their visual aids and to recommend adjustments, if necessary.

When patients with severe visual impairments come to the Center for the Partially Sighted, they are asked to describe their day-to-day activities and tasks which require special visual help.

But, says Ann, "When they're at the center, they have so much to think about they forget to mention something."

It isn't until the patient is at home, frequently alone, that the frustrating day-to-day problems associated with visual impairment surface — the man who feared his card-playing fun was over, for instance.

Enter a PEACer, to observe the patient at home, in school or at work and to offer suggestions which might make life a little easier.

At home, the suggestions range from marking the most frequently used oven temperature controls with brightly colored tape to re-labeling cans of food with hand-printed 3x5 cards.

The counselors also check for proper lighting and safety precautions.

The center has optimal lighting conditions, which might not be duplicated at home. So the counselor might suggest something as simple as increasing the wattage in the bulbs, or strategically placing hi-intensity or gooseneck lamps for reading.

"That can really make the difference for them being able to read or not being able to read," Ann says.

Partially sighted people who live alone seem to cope better with possible safety hazards than do those with families, she says. They are able to organize their homes so furniture and belongings are always kept in the same place. Accidents tend to occur when family members unwittingly move a chair or reorganize the bathroom shelves.

"Organization is really crucial," Ann says, describing how easy it is to mistake a flacon of spray perfume for hair spray, or a tube of first aid ointment for tooth paste.

Other safety precautions include eliminating long telephone cords, decorating sliding glass doors with colorful decals and marking apartment steps with high-contrast tape.

Home decorating tips include the use of non-glossy paint to cut down on glare, magnifying mirrors in the bathroom and high-contrast color schemes. Bold and colorful towels can bring new dimension to an all-white bathroom, while dark shelf paper will provide a contrasting frame for off-white china.

At work, Ann checks the lighting for glare, suggesting tinted eye glasses or even visors, if needed. Reading stands, she says, help prevent back strain caused by bending over to see the words, and she recommends closed-circuit TVs for those who must do a lot of reading and writing.

Rand Corp. acts as a consultant for the center, helping with small projects, such as the construction of a shelf for a patient who regularly uses a computer screen. And the State Department of Rehabilitation provides financial assistance to patients who otherwise cannot afford aids they need in order to work, including special glasses, magnifyers and closed circuit TVs.

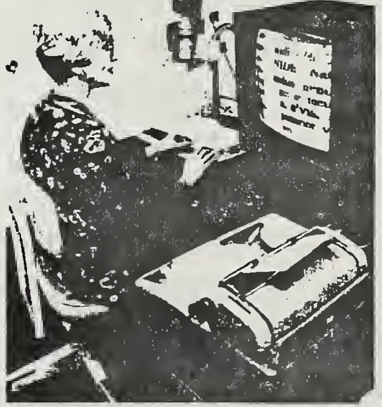
When the PEACers go into a schoolroom, Ann says, it is to both help the partially sighted student and to introduce the entire class to the aids the student uses. They are not toys,
tells the students, as she introd
them to the monocular (for bl
board reading) or special eyegla
with built-in miniature telescopes

"Oftentimes, kids are too em
rasssed to use the aids," Ann
plains. "They get teased."

At the same time, the teacher
be unaccustomed to the needs of
partially sighted student and, per
for the first time, begins to un
stand how self-sufficient the stu
really is.

"They (teachers) assume a
tially sighted student means 'to
blind,' " Ann says. "But there's
they (the students) can do for th
selves."

There's a lot all partially sig
patients — young and old — can d
themselves — with a little help,
occasional house call, from on
their friendly, neighborhood P
ers.



Shirley Appleton of Santa Monica uses a closed-circuit TV for at-home work.

PEACer Ann Schulkin (left) watches Sant
Monican Beulah Dougal re-label grocerie

M. (9)

SANTA MONICA HOSPITAL MEDICAL CENTER

your center for community health

1225 15th Street, Santa Monica, California 90404 (213) 451-1511

Vol. 5, No. 1, Winter, 1980

pacesetter

Visual aids checked

PEACers look at patient needs

SMHMC's Center for the Partially Sighted has implemented an innovative program in which patients are visited in their homes, schools or at work by personal environmental adjustment counselors (PEACers, pronounced peekers) who work with patients and their visual aids.

At the center, people with severe visual impairments receive a variety of services including low vision examinations, prescriptions for and training in the use of visual aids, psychological counseling, orientation and mobility instruction and referral to other community resources.

The PEACer program, an important follow-up activity, allows the center to identify patients who are in need of further services and to collect research data on the effectiveness of its programs.

During the first visit, a patient is asked to specify which visual tasks he or she needs help with and appropriate visual aids are prescribed. At the follow-up visit six months later, one of the PEACers, Ann Schulkin or Lise Tong, observes the patient performing these tasks in order to determine if the aids are being used, how frequently and whether they are being used correctly.

Since a patient's home or work environment presents unique conditions, Schulkin and Tong can often recommend changes that will make them more useful. Sometimes they help patients to use their aids more efficiently as in the case of a woman who thought she had the wrong aid but actually was holding her reading material at an incorrect distance.

"We look for ways to make the environment safer and more comfortable and suggest ways to correct possible hazards or to improve lighting," Schulkin said. In some cases the PEACer recommendations result in engineering consultants making substantial modifications.

> " . . . it's nice to know the days of home visits aren't over."

"We also share ideas about how to make daily living easier. We show people how to relabel groceries and medicines using large print and how to use contrasting colors to their advantage, for example, by using a light-colored cup for dark liquids and vice versa. We demonstrate safety techniques to use with stoves, ovens, windows and doors and we urge people to organize their homes more efficiently," said Tong.

PEACers also ask questions to evaluate the effectiveness of the center's programs. Psychosocial questionnaires, administered during the first two visits, are re-administered during the PEAC visit to determine whether there has been any change in the patient's perceptions or feelings and a patient satisfaction questionnaire also is given.

Special services are performed during a PEACer visit to a school. The counselor can demonstrate to the class how a visual aid works thus helping to make the aid more socially acceptable to a child's peers. The PEACer also can consult with the teacher who may not be fully informed about the visual aids needed by the student.

Upon returning to the center, the PEACer discusses the visit with other staff members and makes recommendations. Many patients are referred back for a low vision re-evaluation, either because new needs have been perceived or because a change in vision has occurred. Others are asked to return for retraining in the use of their aids, to receive orientation and mobility instruction or to join one of the patient groups.

"The PEACer program is an excellent means of assessing how effective our services are," said Dr. Sam Genensky, center director. "Several patients have said it's nice to know the days of home visits aren't over," he

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pacesetter

Octogenarian finds new role as adviser

Two people sit in comfortable, modern chairs and talk quietly as sunlight streams into the small waiting area of the Center for the Partially Sighted. For Mary Louise Russell, an 82-year-old patient turned counselor, who has volunteered to share her experiences with her peers, the area also serves as an office where important work is done.

Mrs. Russell received special training about what to say to those who are depressed over their visual problems and was briefed about the types of questions and situations she should expect.

"Because I'm partially sighted myself, I understand how they feel and I hope by sharing my problems and experiences I can help. People either learn to accept their visual handicap or they don't. Some are discouraged—they sit and grieve because they don't have their complete sight—so I tell them how I learned to cope with and eventually overcome my own disillusionment," she said.

Mrs. Russell's condition, macular degeneration, allows her good peripheral or mobility vision but limited central or detail vision. Through proper visual aids with magnification, she uses her peripheral vision instead of her central vision.

SMHMC's Center for the Partially Sighted offered her new hope through various types of telescopic glasses and magnifiers which allow her to again read, watch television, write checks, shop and do errands. She also regained "the incentive to keep on trying."

"Before coming here, I was discouraged," Mrs. Russell said. "But on my first visit Dr. Samuel Genensky, director, offered some valuable advice: 'Forget what you have lost and do the best you can with what remains.' "

Today Mrs. Russell exemplifies that statement as she empathizes with and comforts 5-to-95-year-old partially sighted patients. The peer counseling program, under the guidance of Dr. Steven Zarit, clinical psychologist, was initiated to create a sense of oneness that allows partially sighted people the chance to interact while comparing experiences and information.

"I recall one patient who said because of his vision, he no longer watched TV or attended plays, but as we spoke he began to realize other options were available," Mrs. Russell added.

"I explained that it wasn't necessary to quit doing what you enjoy. Before my eye problems, I was an avid theater goer and always purchased season tickets, but when I began having difficulty with my vision, I didn't attend a performance for two years.

"When I received my aids and discovered I could use them at plays, I was thrilled. I recently saw "Annie" and although I couldn't see the actors' faces perfectly, I did see the costumes and it was enjoyable.

"It's wonderful to do things for myself again and to feel useful by helping others," she concluded.

Mary Louise Russell, a patient and peer counselor at the Center for the Partially Sighted, exchanges ideas on how to adjust to using visual aids such as a large print checkbook with new patient Teddy Freedman of Saskatchewan. Canada.

CLOSED-CIRCUIT MAGNIFIER—Sam Genensky overcomes extremely weak vision reading type enlarged on closed-circuit TV.

Times photos by Bob Baker

S.M. CENTER BOOSTS THEIR CAUSE

Partially Sighted See a Difference

By **BOB BAKER**
Times Staff Writer

Nearly 40 years later, Sam Genensky still remembers it as "the bravest damn thing I ever said in my life."

He was 13 and a student in a school for the blind in Massachusetts. He was there against his will. He was rebellious, and when a teacher challenged him—"Why can't you act like a well-behaved blind child?"—the boy shot back, "Because I'm not blind."

Today, from a clinic in Santa Monica, Genensky is fighting the same battle: Trying to convince Americans to stop treating an estimated 1.7 million partly sighted people as though they were blind.

These are people with extremely weak vision, even when corrected by glasses—people who can find a bus stop on the street but cannot read the details on a sign once they get there; people who can tell the drug store from the adjacent market, but can't read the label on the bottle of medicine they buy.

Technically, they are people whose visual acuity in their better eye is worse than 20/70, even with glasses; people who cannot read a newspaper.

They are also a forgotten people, Genensky contends, confronted with an institutionalized prejudice which stamps them as helpless and pushes them into programs for the blind—or leaves them to grope on their own with no specialized services.

Genensky, director of the Center for the Partially Sighted, says he is fighting a medical and government bureaucracy that pays far more attention to people who are completely blind, even though that group is less than one-tenth the size of the partly sighted.

"This tail's been wagging the dog like crazy," he complains. "A disproportionate share of research funds and direct aid is devoted to the functionally blind. I find the general public totally ignorant of any middle ground. It has a dichotomous view of the universe: Either you can see or you're blind."

Los Angeles Times
The West Side
W PART IX
THURSDAY, APRIL 10, 1980

With a style that mixes brusqueness and compassion, Genensky, 52, began devoting himself to the cause of the partially sighted in the early 1970s. He brought with him the most painful kind of empathy.

Three days after he was born, a hospital staff member mistakenly put an alkaline solution in his eyes instead of silver nitrate, which was normally used to prevent infection. It burned the corneas of both eyes, leaving one sightless and the other able to grasp only the broadest outlines of form and color. The good eye had 20/800 vision.

Four months later, he developed glaucoma in both eyes. Because of the peculiarity of the injury and disease, glasses would not help.

Nevertheless, the boy was willing to get through life with a squint rather than a white cane. He could read print if he held it within an inch or so of his eye. "I was lucky," he said. "The little town I came from had sight-saving classes. I had superb teachers. They let me do whatever I had to."

But when it came time for him to attend public secondary school, officials balked. They had a rule that said anyone whose corrected vision was worse than 20/200—the definition of legal blindness—could not be admitted. At 13, Genesky was told he would have to begin attending a school for the blind.

"I *served* a year in that school," he said. "The emphasis there was on turning me into a totally blind child. I learned Braille there—even though I had some vision."

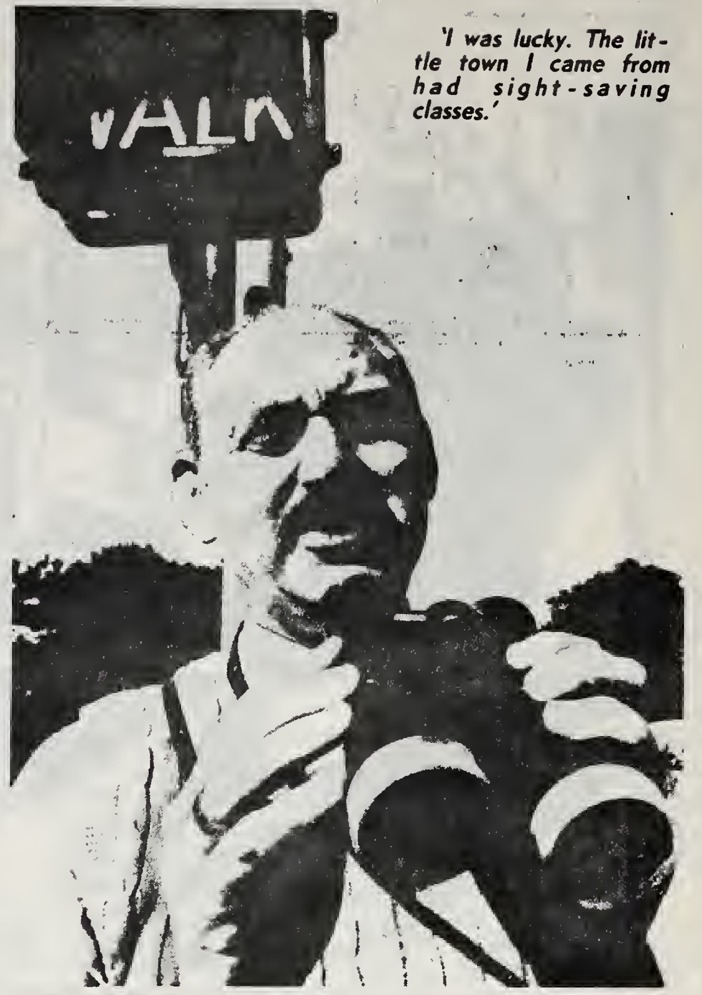
Today, Genensky's clinic, funded by a $600,000 grant from the National Institute for Handicapped Research, is one of only two in the nation that provide therapy, counseling and political lobbying for partly sighted people.

"If most partly sighted people had the appropriate visual aids, they could function in the mainstream of society," he says.

Genensky, a doctor of mathematics who left the Rand Corp. to create the clinic, is his own best example. Because his low vision cannot be bolstered by glasses, he wears binoculars around his neck to read street signs. He uses a pair of telescopic spectacles, which look like a jeweler's glass attached to a pair of glasses, to watch television. And he uses an 18-inch-long telescope when he attends the theater. At home and in his office, there are closed-circuit television cameras that focus on a printed page and magnify it on the screen.

About 600 patients a year visit Genensky's clinic, which is located in the Santa Monica Hospital Medical Center. Many are exasperated—fearful that their vision will continue to deteriorate, scared that there is no cure, sometimes confused by conflicting diagnoses from eye specialists.

"I refer anybody with any sort of low-vision problem to Sam. He's fantastic," said Helen Harris, president of the Greater Los Angeles chapter of the Retinitis Pigmentosa Foundation. (Retinitis pigmentosa is a group of eye ailments in which the victim gradually loses virtually all peripheral vision, eventually seeing through an extremely narrow field. About 100,000 Americans suffer from it.)



'I was lucky. The little town I came from had sight-saving classes.'

LOOKING AHEAD—Genensky carries binoculars to help him read street signs

"It's hard for people to see us as a group because our vision differs," Genensky said, "from 20/70 to 20/2,000. Some of us see in the bottom of the visual field, some of us see in the top; some of us see only a pinhole of vision, others see much wider.

"I dream of seeing centers like ours all over the country My modest dream says 12 to 15.

"You see, without a center like this, what usually happens to a partially sighted person is that an ophthalmologist (physician specializing in eye diseases) either says, 'There's nothing I can do,' or sends him to one of the traditional agencies for the blind. If the person wanted to take on the guise of being blind, he might develop rapport with that system.

"But if the person didn't want to be classified as blind, he would be left to flounder. Some very bright people would make it on their own, but most would not. It would depend upon them bumping into the right optometrist (specialist in vision correction)—and that's just as inappropriate as all hell."

Harris was an example. Nobody told her she had retinitis pigmentosa until she was 22 and had lived most of her life in clumsy embarrassment. In addition, she said, nobody told her the disease could be genetically passed along until two of her three sons were diagnosed as inheritors.

In Genensky's youth, he was freed from the burden of attending the special school for the blind when a new superintendent of public schools took over and allowed the boy to rejoin regular classes.

"For the first year I was in public school, I couldn't see the blackboard," Genensky said. "My grades were Bs and Cs. Then I brought a pair of my father's World War I binoculars to class. I started getting As. And that's why I am so passionate about getting the proper aids for children."

But many school systems, fearful of the cost of having to provide visual aids, are uncooperative, he said.

"They're fearful that they'll be required to pick up the cost under the federal law that requires public schools to provide handicapped students with appropriate materials. So they're thwarting the law by putting out as little information as possible to parents.

"So what happens to a partially sighted child? He's either 'mainstreamed'—put into classes with normal kids, where he falls further and further behind without the proper aids—or the school district puts him into a more restrictive environment. But if he had the aids, he might make it in a regular class."

He winced as he added, "I have parents tell me they don't even *know* about these aids."

Part of the problem is that the federal Medicare program and Medicaid programs in most states refuse to reimburse partially sighted persons for many of the visual aids Genensky says are necessary. (California's Medi-Cal program will pay for any visual aid that is useful in rehabilitation, a state spokesman said.)

"Two myths should be put to rest," Genensky said. "One is that if you're partially sighted and legally blind, you might as well be taught how to function as blind because you'll eventually become blind. I've done worst-case mathematical models and in fact the probability of functional blindness if extremely small. But among institutions to serve the blind, that prejudice is as strong as it ever was.

"The second myth is that a partially sighted person is worse off than a blind person because he's not fish or fowl. Total nonsense! True, he will be more frustrated; today he usually gets either services designed for the totally blind or he gets nothing. But if we can make some changes, if we can get him those services, he will be better than blind."

N. Center Information Packet

CENTER FOR THE PARTIALLY SIGHTED
Santa Monica Hospital Medical Center
1250 Sixteenth Street, Santa Monica, California 90404 (213) 451-1511, Ext. 2393

LOW VISION EXAMINATIONS AND LOW VISION AIDS

For partially sighted individuals, the first step is to have an ophthalmological examination to determine if they have an eye disorder that needs immediate medical attention or that should be followed over time. The second step is to find an ophthalmologist or optometrist who is really knowledgeable concerning low vision examinations, visual aids, and what those aids can and cannot do for partially sighted persons. This will not be easy because there are very few clinicians who are qualified to give quality low vision care. Most clinicians who specialize in low vision are optometrists. In general, the selection of appropriate visual aids should be made by the low vision clinician. However, the latter should make this decision based not only upon a thorough examination of the patient's eyes, but also upon what the patient wants to do that requires the use of augmented sight. For example, for some people reading and writing may be most important, while for others it may be sewing, pursuing a hobby, watching TV, or walking about unassisted. Those patients with multiple goals may very well require more than one visual aid, since near-viewing tasks and distant-viewing tasks will of necessity require different kinds of aids.

Visual aids are not toys and hence, in general, should be selected with the help and advice of a qualified clinician. A few partially sighted people have an excellent grasp of their remaining eyesight and an unusual insight as to which non-prescription aids would benefit them. However, most partially sighted persons need help and guidance, and with few exceptions the best place to obtain that help and guidance is from a qualified low vision clinician.

It is important to note that while visual aids can help most partially sighted persons, including many classified as legally blind, visual aids cannot help everyone. Each individual's impairment, needs, and goals must be considered.

CPS

CENTER FOR THE PARTIALLY SIGHTED

Santa Monica Hospital Medical Center
1250 Sixteenth Street, Santa Monica, California 90404 (213) 451-1511, Ext. 2393

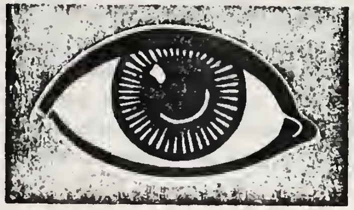
The Center for the Partially Sighted needs support from private individuals and organizations in order to ensure its long-term operation, to encourage and assist in the development of similar centers elsewhere, and to establish a fund to assist patients who cannot afford the cost of their examinations and visual aids.

The following are examples of the kinds of services that your tax deductible donation will purchase . . .

$10-$20	- a visit to a patient's home, school, or work site by a CPS counselor to check on a patient's progress with visual aids and to recommend modificatio in the visited environment that will make it safer or more visually comfortable. Also, referral of patients to community resources that can help them with their educational, vocational, recreational, transportation, and other needs.
$15	- participation in a group therapy session.
$30	- training in the proper use of a visual aid that will help a partially sighted person to read, write, continue hobbies, travel about independently, or participate in other activities that are important to the individual.
$45	- a private or family therapy session with one of our staff psychologists.
$60	- orientation and mobility training designed to utilize all of a patient's sensory capabilities, including residual vision.
$125	- six months of low vision care, including low vision evaluation, prescriptio or recommendation of visual aids, training in the use of those aids, and follow-up visit by a CPS counselor.
$5-2500	- visual aids for patients who cannot afford to purchase them or for whom there is no insurance coverage. These aids enable partially sighted persons to use their remaining eyesight to the fullest as they perform such tasks as reading, writing, taking notes from a chalkboard, continuing hobbies, traveling independently on foot or by public transportation, and viewing sports or theatrical events. Visual aids vary greatly in price and complexity. They include hand and stand magnifiers, reading stands, monoculars and binoculars, microscopic and telescopic spectacles, special lights, and closed circuit television systems.
$3000	- printing of informational brochures that help partially sighted individuals and their families to learn how to cope with day-to-day problems.
$100,000 and up	- innovative social, clinical, or technical research relevant to meeting the special needs of the partially sighted.

DOES THE CENTER DO RESEARCH?

The Center carries on a vigorous and extensive research program of the highest quality. Our research agenda includes exploration of the functioning of the partially sighted eye by means of the VER and ERG described under Center services, development and testing of visual aids, investigation of difficulties encountered in coping with problems of daily living, investigation of psychosocial problems of the partially sighted, and determination of the visual prospects and characteristics of that population by age over time.



WHAT DO CENTER SERVICES COST?

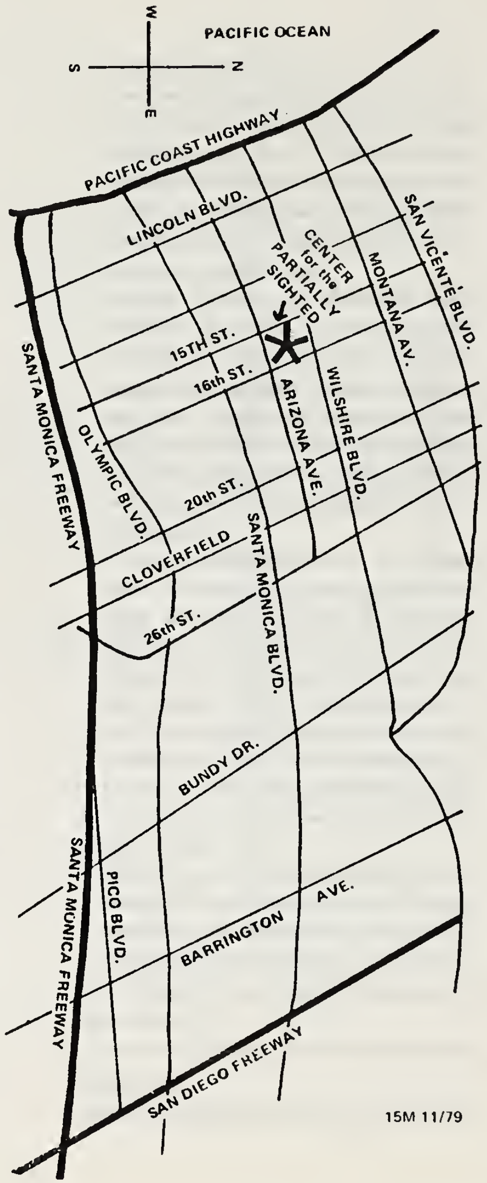
Most of the broad array of services offered by the Center are currently subsidized by federal grants from the National Institute of Handicapped Research and the Administration on Aging. We cover a portion of our operational costs via a fee schedule that is based on the patient's ability to pay. In addition, Medicare, Medi-Cal, and the California Department of Rehabilitation reimburse us in part for some of the services given to eligible patients.

HOW CAN YOU HELP THE CENTER FOR THE PARTIALLY SIGHTED?

Fees for services and reimbursement from Medicare, Medi-Cal, and the California Department of Rehabilitation cover only a small part of the cost of the varied services offered by the Center. Because of this and because continued federal support is so uncertain, we need your help. We need donations from concerned individuals, organizations, and foundations in order to ensure the long-range existence of the Center. Please send your tax deductible gift directly to the Center for the Partially Sighted.

HOW CAN APPOINTMENTS BE MADE AT THE CENTER?

Inquiries can be made via phone or mail. Mail should be addressed to the Center for the Partially Sighted, Santa Monica Hospital Medical Center, 1250 16th Street, Santa Monica, California 90404. We are located on the third floor of the original building of the Santa Monica Hospital Medical Center. For telephone appointments, please call (213) 451-1511, extension 2393. We welcome your inquiries.



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CENTER FOR THE PARTIALLY SIGHTED

SANTA MONICA HOSPITAL MEDICAL CENTER

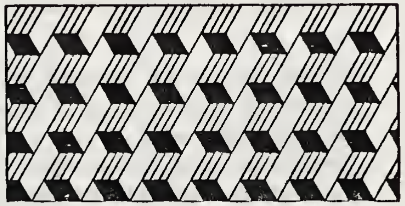
1250 Sixteenth Street
Santa Monica
California 90404
(213) 451-1511
Extension 2393

The Center for the Partially Sighted of the Santa Monica Hospital Medical Center is the implementation of a fresh new concept in services for the partially sighted. With the establishment of the Center, it is now possible for partially sighted persons to obtain services designed to meet their special needs. At the Center the partially sighted are treated as partially sighted, not as blind people. Our emphasis is upon the use of all sensory capabilities, including residual vision.

Center personnel are dedicated to the proposition that the partially sighted can and should function within fully sighted society. We are convinced that when partially sighted people utilize all their sensory capabilities, they are in a much better position to obtain a good education, to qualify for a wide variety of jobs and professions, and to derive greater enjoyment from their leisure hours. Further, we believe that through the use of these sensory capabilities, the partially sighted are better able to retain or acquire a healthy self-image, confidence in themselves, and a sense of independence leading to decreased reliance on social and financial services. Thus, Center personnel are interested in helping partially sighted people of all ages to live happy, healthy, and independent lives within the context of the majority or fully sighted society.

WHO IS ELIGIBLE FOR CENTER SERVICES?

The Center serves any person whose visual acuity in the better eye, even with ordinary corrective lenses, does not exceed 20/70 but is better than light perception or light projection; we also serve those whose visual field has a maximum diameter that does not exceed 30 degrees. In general terms, this means that the Center serves those people who are unable to read newspaper column type even with ordinary eyeglasses, but who can see well enough to distinguish shape and form and, with the help of appropriate visual aids, some or considerable detail.



HOW DOES A PATIENT ARRANGE TO OBTAIN CENTER SERVICES?

Most Center patients are referred to us by ophthalmologists, optometrists, the Department of Rehabilitation, or school systems. However, we also accept referrals from other persons or organizations serving the visually impaired.

WHAT SERVICES DOES THE CENTER PROVIDE?

The Center currently provides the following services . . .

- a complete low vision examination, including the prescription or recommendation of appropriate visual aids, training in the use of those aids, and referral to an ophthalmologist, when appropriate.
- evaluation via visual evoked response (VER) and electroretinogram (ERG) to gain a more accurate assessment of the human visual system (particularly with patients who are unable to report clearly and accurately regarding the quality of the image they see). The VER and ERG can also be used to carry out research aimed at obtaining a better understanding of visual impairment.
- consultation to the partially sighted to aid their functioning in home, school, or working environments, with special help for families in caring for and guiding the partially sighted member.
- orientation and mobility training designed to utilize all the patients' sensory capabilities, including their valuable residual vision.
- individual, group, and/or family counseling to help patients establish their identities as partially sighted persons, recognize the value of their residual vision, and overcome barriers to using their residual vision and other sensory capabilities to the fullest.
- special group sessions both for adults and for parents of partially sighted children to provide a forum where patients and/or their families can share their experiences relative to coping with a visual impairment.
- referral of patients and their families to other community services related to educational, vocational, recreational, and social opportunities.
- a vigorous outreach program to inform the partially sighted and professionals who work with the visually impaired about the Center and our services.
- presentations to persons and organizations serving the visually impaired to disseminate information about the partially sighted, the problems they encounter, new techniques to aid them, and current research, including research conducted at the Center.

As more funds become available, the Center also wishes to . . .

- provide genetic counseling regarding the chances of visual defects being transmitted to future generations.
- prepare written materials regarding the use of residual vision by partially sighted persons in adapting to their environment.
- train interested professionals and paraprofessionals to work with the partially sighted and to develop centers like ours elsewhere in the nation or in other countries.

TESTIMONY CONCERNING ARCHITECTURAL AND ENVIRONMENTAL BARRIERS FACED BY PARTIALLY SIGHTED PERSONS

PRESENTED TO

THE CITY COUNCIL OF THE CITY OF SANTA MONICA

on

TUESDAY, JANUARY 8, 1980

By

SAMUEL M. GENENSKY, PH.D., DIRECTOR
CENTER FOR THE PARTIALLY SIGHTED
SANTA MONICA HOSPITAL MEDICAL CENTER

THANK YOU FOR THIS OPPORTUNITY TO MAKE YOU AWARE OF TWO SERIOUS ARCHITECTURAL AND ENVIRONMENTAL BARRIERS THAT CONFRONT PARTIALLY SIGHTED PERSONS AND THAT CAN BE ELIMINATED VERY EASILY AND VERY INEXPENSIVELY. HOWEVER, BEFORE DOING THAT PERMIT ME TO TELL YOU WHO THE PARTIALLY SIGHTED ARE AND HOW NUMEROUS THEY ARE IN OUR NATION AND IN OUR COUNTY.

ROUGHLY SPEAKING, THE PARTIALLY SIGHTED ARE THOSE PERSONS WHOSE EYESIGHT IN THEIR BETTER EYE, EVEN WITH THE HELP OF ORDINARY EYEGLASSES, IS NOT GOOD ENOUGH TO PERMIT THEM TO READ NEWSPAPER COLUMN TYPE BUT IS BETTER THAN THAT REQUIRED TO DISTINGUISH, ALBEIT VAGUELY, OBJECTS THAT ARE IN HIGH CONTRAST TO THEIR BACKGROUND. THEY ARE ALSO THOSE PEOPLE WHOSE FIELD OF VISION IS RESTRICTED TO 30 DEGREES OR LESS. CURRENTLY THERE ARE AT LEAST 1,760,000 PARTIALLY SIGHTED PERSONS IN THIS COUNTRY, AT LEAST 70,000 OF WHOM LIVE IN LOS ANGELES COUNTY. ABOUT 20 PERCENT OF THE PARTIALLY SIGHTED ARE LEGALLY BLIND AND THOSE THAT ARE LEGALLY BLIND MAKE UP MORE THAN 75 PERCENT OF THE LEGALLY BLIND POPULATION. I MYSELF AM LEGALLY BLIND. IN FACT 60 PERCENT OF THE LEGALLY BLIND SEE BETTER THAN I DO.

THE FIRST OF THE TWO ARCHITECTURAL AND ENVIRONMENTAL BARRIERS CONFRONTING PARTIALLY SIGHTED PERSONS IS THAT CAUSED BY POORLY MARKED STAIRS. PARTIALLY SIGHTED PEOPLE FREQUENTLY HAVE DIFFICULTY DISTINGUISHING THE PRESENCE OF STAIRS AND DISTINGUISHING ONE STEP FROM ANOTHER. THIS PROBLEM HAS A

SIMPLE, PRACTICAL AND INEXPENSIVE SOLUTION, NAMELY TO MARK THE LEADING EDGE OF EACH STEP IN A STAIRWAY, ON BOTH THE RUNNER AND THE RISER WITH A 2" WIDE SLIP-RESISTANT STRIP THAT RUNS THE ENTIRE WIDTH OF THE STEP. THE STRIP SHOULD BE OF A COLOR AND GRAY VALUE THAT IS DISTINCTLY DIFFERENT FROM THOSE OF THE REST OF THE STEP.

IT SHOULD BE NOTED THAT THIS METHOD OF MARKING STAIRS IS NOT ONLY OF VALUE TO THE PARTIALLY SIGHTED, BUT IT IS ALSO OF VALUE TO OLDER PERSONS WITH GOOD EYESIGHT WHO ARE FEARFUL OF TRIPPING ON OR FALLING DOWN STAIRS, AND AS A CONSEQUENCE SUSTAINING SERIOUS INJURY.

THE SECOND SERIOUS ARCHITECTURAL AND ENVIRONMENTAL BARRIER CONFRONTING PARTIALLY SIGHTED PERSONS IS THAT CAUSED BY POORLY MARKED RESTROOM ENTRANCES. PARTIALLY SIGHTED PERSONS HAVE GREAT DIFFICULTY LOCATING RESTROOMS AND DISTINGUISHING WHICH ARE FOR MEN AND WHICH ARE FOR WOMEN. FORTUNATELY THIS PROBLEM ALSO HAS A SIMPLE, PRACTICAL AND INEXPENSIVE SOLUTION THAT IS NOT ONLY OF VALUE TO PARTIALLY SIGHTED PERSONS BUT TO TOTALLY BLIND PERSONS AS WELL. TO SOLVE THIS PROBLEM ATTACH A PANEL THAT IS 1/4" THICK, TO THE EXTERIOR FACE OF EACH DOOR LEADING INTO A RESTROOM. THE PANEL ON A MEN'S RESTROOM DOOR SHOULD BE AN EQUILATERAL TRIANGLE, 12" ON AN EDGE WITH A VERTEX POINTING UPWARD, AND THAT ON A WOMEN'S RESTROOM DOOR SHOULD BE A CIRCLE 12" IN DIAMETER. THE COLOR AND GRAY VALUE OF THESE PANELS SHOULD BE DISTINCTLY DIFFERENT FROM THOSE OF THE DOORS

TO WHICH THEY ARE ATTACHED. APPROPRIATE INTERNATIONAL SYMBOLS OR WORDS SHOULD BE AFFIXED TO THESE PANELS OR PLACED NEAR THEM FOR THE CONVENIENCE OF FULLY SIGHTED PERSONS.

IT IS FAIR TO ASK WHY WE SHOULD NOT USE ENLARGED INTERNATIONAL SYMBOLS OR WORDS TO SOLVE THE RESTROOM PROBLEM. THE ANSWER IS QUITE SIMPLE. IN ORDER TO CORRECTLY IDENTIFY INTERNATIONAL SYMBOLS OR WORDS, THE VIEWER MUST HAVE FAR BETTER EYESIGHT THAN IS AVAILABLE TO MOST PARTIALLY SIGHTED PERSONS--ESPECIALLY THOSE WHO ARE LEGALLY BLIND. THIS CRITICISM IS NOT VALID IN THE CASE OF THE GEOMETRICAL FIGURES DESCRIBED ABOVE.

I HOPE THAT YOU WILL GIVE SERIOUS CONSIDERATION TO THESE FORMIDABLE ARCHITECTURAL AND ENVIRONMENTAL PROBLEMS OF THE PARTIALLY SIGHTED, AND THAT YOU WILL DECIDE TO ADAPT AND IMPLEMENT THE SIMPLE, PRACTICAL AND ECONOMIC SOLUTIONS I HAVE DESCRIBED ABOVE IN AND AROUND ALL PUBLIC BUILDINGS WITHIN THE JURISDICTION OF THE CITY OF SANTA MONICA.

THANK YOU.

EXHIBIT A

EXHIBIT A SHOWS A SET OF DARK GREEN STEPS EACH OF WHICH IS MARKED ON THE LEADING EDGE OF THE RUNNER AND THE RISER BY A WHITE STRIPE THAT RUNS THE WIDTH OF THE STEP.

EXHIBIT B

EXHIBIT B SHOWS A RESTROOM DOOR AFFIXED TO WHICH IS A PANEL 1/4" THICK. THE PANEL IS AN EQUILATERAL TRIANGLE WITH A 12" EDGE AND WITH ONE VERTEX POINTING UPWARD. THE DOOR IS LIGHT ORANGE AND THE PANEL IS DARK BROWN. AFFIXED TO THE PANEL IS A CONVENTIONAL INTERNATIONAL SYMBOL EMPLOYED ON MEN'S RESTROOM DOORS. NOTE THAT THE INTERNATIONAL SYMBOL HAS BEEN TRIMMED IN SUCH A WAY AS TO PRESERVE ITS IDENTITY WHILE AT THE SAME TIME CAUSING IT TO CONFORM TO THE BOUNDARIES OF THE EQUILATERAL TRIANGLE.

I BELIEVE THAT IT MIGHT HAVE BEEN BETTER TO HAVE USED A SMALLER INTERNATIONAL SYMBOL ON THIS RESTROOM DOOR. IF THIS HAD BEEN DONE, THE FULLY SIGHTED COULD STILL HAVE RECOGNIZED THE INTERNATIONAL SYMBOL AND MORE OF THE TRIANGLE WOULD HAVE BEEN EXPOSED--A STATE OF AFFAIRS THAT WOULD HAVE BENEFITED THE PARTIALLY SIGHTED.

EXHIBIT C

EXHIBIT C SHOWS A RESTROOM DOOR AFFIXED TO WHICH IS A PANEL 1/4" THICK. THE PANEL IS A CIRCLE WITH DIAMETER EQUAL TO 12". THE DOOR IS A LIGHT ORANGE AND THE PANEL IS DARK BROWN. AFFIXED TO THE PANEL IS A CONVENTIONAL INTERNATIONAL SYMBOL EMPLOYED ON WOMEN'S RESTROOM DOORS.

I BELIEVE THAT IT MIGHT HAVE BEEN BETTER TO HAVE USED A SMALLER INTERNATIONAL SYMBOL ON THIS RESTROOM DOOR. IF THIS HAD BEEN DONE, THE FULLY SIGHTED COULD STILL HAVE RECOGNIZED THE INTERNATIONAL SYMBOL, AND MORE OF THE CIRCLE WOULD HAVE BEEN EXPOSED WHICH WOULD HAVE BEEN BENEFICIAL TO PARTIALLY SIGHTED PERSONS.

P. Sample Case Conference Notes

2/1/80

Patient	Relevant Case Information	Decision
J.K.	Age 2½, second visit today, PH PV, nystagmus	Optometrist will work with patient's parents.
J.L.	Age 82, second visit today, senile macular degeneration and glaucoma.	No special services needed.
E.B.	Age 82, second visit today, senile macular degeneration and cataracts. Responded well to reading lens. Recently moved here from the East and complains of missing her friends.	Psychological screening, recommended patient discussion group and senior citizen activities.
M.R.	Age 43, second visit today, Stargardt's disease, good response to aids.	No special services needed.
E.N.	Age 66, first visit yesterday, senile macular degeneration and cataracts. Recently had heart attack and is very anxious.	Schedule psychological screening.
A.S.	Age 58, first visit yesterday, Retinitis pigmentosa and cataracts. Patient's wife may be unsupportive.	Schedule psychological screening. Consult with wife.
V.W.	Age 9, first visit yesterday, VonRecklinghausen's disease. Patient mildly retarded. Has mobility problems.	Refer to orientation and mobility instructor. Optometrist will contact patient's school regarding access to CCTV.

Process Notes: Two optometrists, two low vision assistants, a psychologist, and the community resource/outreach coordinator were present. In addition to presenting specific cases and making recommendations, the group discussed the implications of particular eye pathologies for patients' functioning. There was also a discussion of the general question of when psychological counseling is warranted. The psychologist suggested that counseling is appropriate if depression or anxiety is present, either as a response to real losses or exaggerated losses. The group also discussed the possibility of trying to increase the number of referrals for family counseling.

APPENDIX Q

OFFSITE SCREENINGS: LOG

Date	Site	Number of Persons Screened/Number of Partially Sighted Persons Identified
7/10/79	C.L.I.M.B., Sierra Madre (Center for Living Independence for the Multihandicapped Blind)	10/7
8/2/79	Sierra Bonita Towers, Pasadena (retirement hotel)	7/5
11/16/79	People's Coordinated Services Center #6, Los Angeles (multipurpose senior center)	13/4
1/24/80	Pacoima Multipurpose Senior Center	12/3
2/29/80	Van Nuys Multipurpose Senior Center	23/7
5/14/80	Westwood Horizons (retirement hotel)	22/9
6/6/80	Colony Park Club for the Blind and Visually Impaired, Ontario	12/7

R. LOW VISION SCREENING FORM

Name____

Date of Last Eye Exam _______________ Age__________

		OD	OS
DISTANCE VISION	sc		
	cc		
NEAR VISION	sc		
	cc		

COMMENT

RECOMMENDATION

If low vision:

ADDRESS____

____

PHONE__________________________

11/11/2011
T 245293 5 37 00
HF GROUP - IN